

ALASKA PENINSULA AND ALEUTIAN ISLANDS AREAS  
ANNUAL SALMON AND HERRING MANAGEMENT REPORT  
1991

By

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## INTRODUCTION

The Alaska Peninsula and Aleutian Islands Management Areas includes all of the Aleutian Islands, the Bering Sea (north) side of the Alaska Peninsula west of Cape Menshikof and the Pacific (south) side of the Alaska Peninsula located west of Kupreanof Point (Figure 1). No commercial salmon or herring fishing effort presently occurs west of Unalaska Island.

The area constitutes permit Area M for both salmon and herring. During January through June, Area T (Bristol Bay) salmon fishermen are allowed to fish during the open season in the Inner Port Heiden and Cinder River Sections. During August through December Area T fishermen can commercially fish in the Inner Port Heiden and Cinder River Sections and in Ilnik Lagoon.

Unlike salmon, which is under limited entry to commercial fishing, herring fishing is open to anyone wishing to purchase an Area M herring interim use permit from the state.

There are three headquarters offices in the Alaska Peninsula and Aleutian Islands Areas. The Dutch Harbor office has Aleutian Islands Area salmon and herring management responsibilities. Beginning in 1990, the Sand Point office assumed responsibility for managing salmon in the Southeastern District and for herring management throughout the Alaska Peninsula Area. The balance of the Alaska Peninsula Area's salmon fisheries were managed from Cold Bay during 1990-91. Port Moller serves as a salmon research office and is also used by the Area Management Biologist in Sand Point to manage herring. Beginning in 1992, the Port Moller office will be responsible for salmon management in the Herendeen-Moller Bay, Bear River, Three Hills, and Ilnik Sections. Assistance in monitoring the Port Heiden, Ilnik, and Cinder River stocks is given by the Chignik Area salmon staff.

There were four salmon weirs operating in the Alaska Peninsula Area during 1991. In addition to the Bear and Nelson River weirs which

have been used (often towers rather than weirs were used in these locations) for many years, weirs at Orzinski (Orzenoi) and Ilnik were operated in 1991. Orzinski has been weired during 1929-41 and 1990-91. Due to the importance of Orzinski sockeye in determining fishing time for the Northwest Stepovak Section, the amount of attention this area receives in regards to potential Chignik sockeye interception, and the difficult (often dangerous) job of trying to estimate fish from the air at Orzenoi, it was decided to reinstall a weir. Orzinski is an easy system to weir, unfortunately this can't be said for 400 plus foot wide Ilnik Lagoon. It was decided to weir Ilnik due to the sometimes poor conditions for estimating fish from the air, and the importance of this system in determining fishing time for both the Ilnik Lagoon fishery (dominantly set gill nets) and a large drift gill net fleet fishing outside the lagoon. Unfortunately, there were too many problems in securing a fish tight weir (a sandy bottom, debris, and tides) that it was impossible to obtain good escapement data in 1990. In 1991 the weir was modified by placing plywood underneath the tripods and attaching the plywood to a cable stretched across the lagoon. This enabled successful operation (with difficulty) during the 1991 season. However, the cable and most of the plywood are buried in sand. Consequently, successful operation of the Ilnik weir is questionable during 1992.

An ADF&G pilot (Hal Terry) equipped with a Piper Supercub (on wheels) and a DeHaviland Beaver (on wheel floats) provides much of the aircraft needs. A second pilot (Dave Henley) with a Supercub (on wheels) is based at Chignik and assists in Alaska Peninsula Area operations. Local air taxis utilized include Peninsula Airways and Kenai Floatplane Service. The Alaska Department of Public Safety Grumman Goose is also used.

The M/V RESOLUTION is used to transport supplies. The Fish and Wildlife Division (Department of Public Safety) vessels VIGILANT and WOLSTAD were used to monitor the South Unimak fishery.

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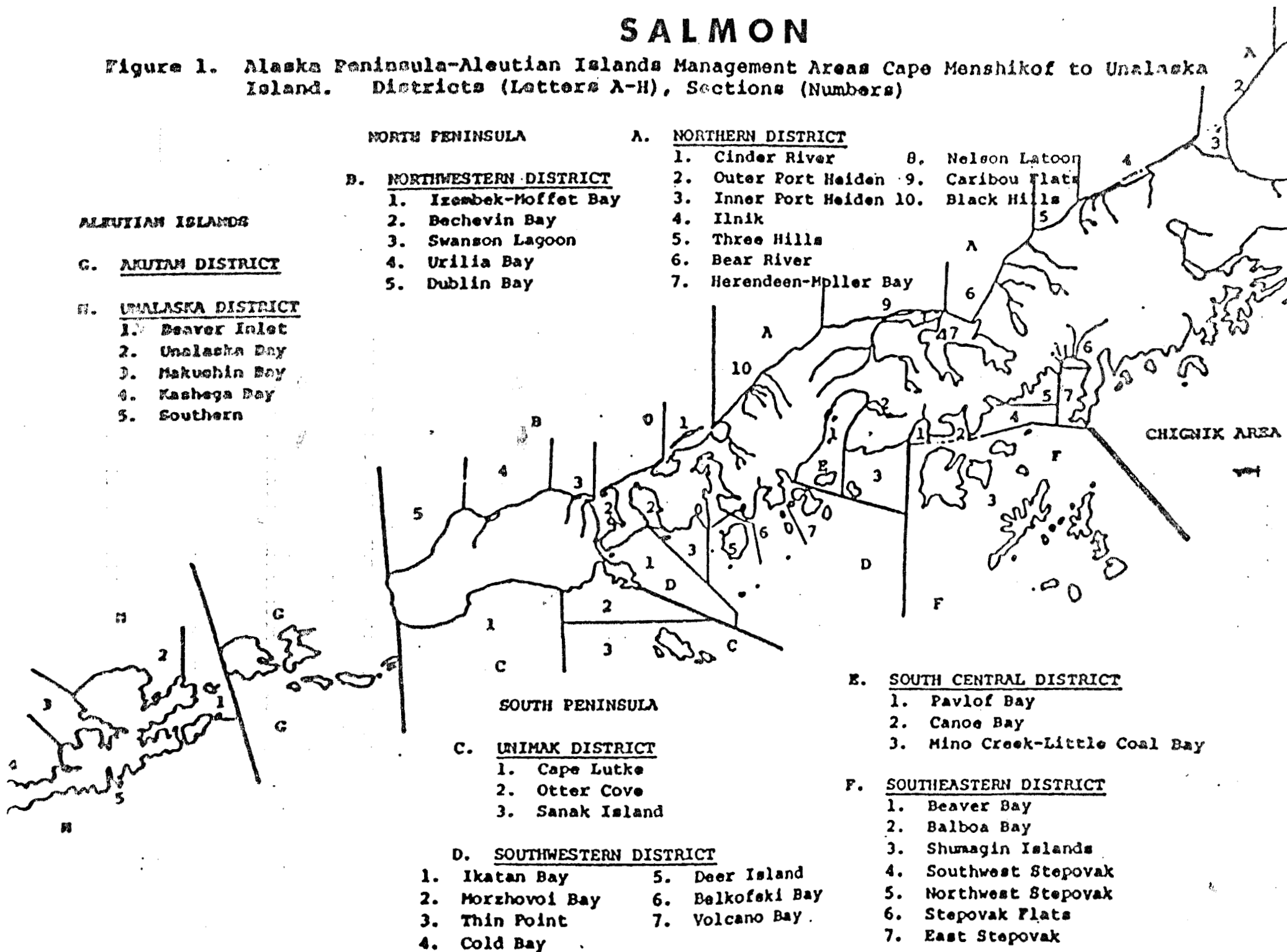
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# SALMON

Figure 1. Alaska Peninsula-Aleutian Islands Management Areas Cape Menshikof to Unalaska Island. Districts (Letters A-H), Sections (Numbers)



## **SALMON**

### **GENERAL BACKGROUND**

The salmon fisheries in the Alaska Peninsula Area date back to at least 1888 when canneries were reportedly constructed (but remained for a very brief period of time) at Orzinski (Orzenoi) Bay and Thin Point Cove. However, the earliest catch records for the Alaska Peninsula Area date back only to 1906. The first recorded Aleutian Islands Area commercial salmon catches were in 1911.

Early catches were dominantly sockeye salmon with a few chinook and coho salmon. The first year in which pink and chum salmon catches exceeded 500,000 each was 1916. Area wide historical catches are listed in Table 1.

A large portion of fishermen's earnings along the South Peninsula come from harvesting migrant salmon. The South Peninsula interception fisheries include the South Unimak (also known as False Pass) June fishery, the Shumagin Islands June fishery, and the Southeastern District Mainland (also known as Balboa-Stepovak or just Stepovak) fishery.

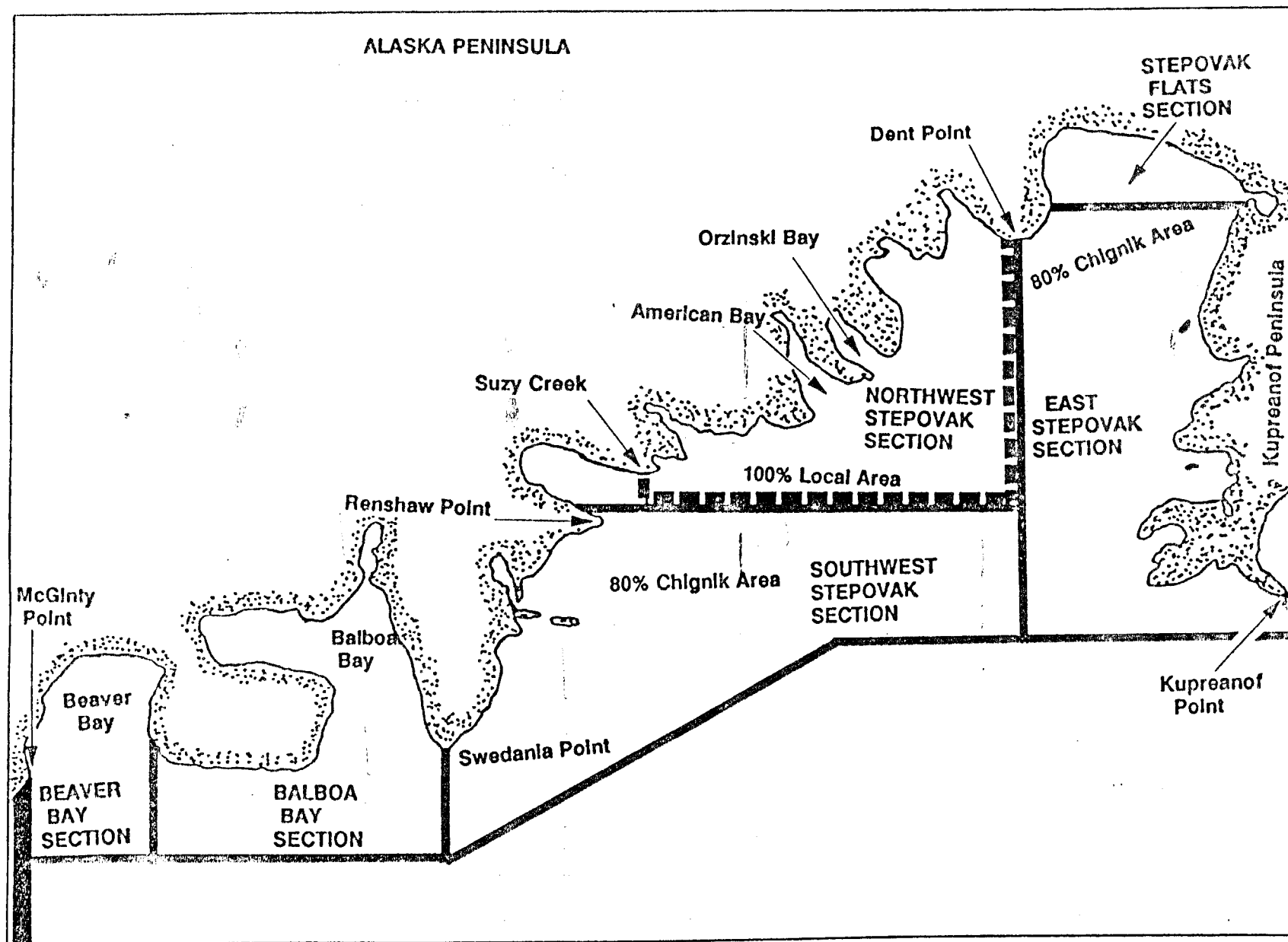
### **Southeastern District Mainland Fishery**

Tables 7-11 contain data regarding the Southeastern District Mainland fishery.

The Southeastern District Mainland fishery (Figure 2) includes the Beaver Bay, Balboa Bay, Southwest Stepovak, Northwest Stepovak, East Stepovak, and Stepovak Flats Sections. Fishing effort during June and most of July is primarily targeted on Chignik destined sockeye salmon. There is also a local sockeye salmon run at Orzinski Lake in the Northwest Stepovak Section and early July chum salmon runs in the Stepovak Flats Section. The Northwest Stepovak and Stepovak Flats Sections are managed on a local stock basis throughout the season. After July 25, the entire Southeastern



Figure 2. Southeastern District Mainland



District Mainland is managed for local stocks, primarily pink and chum salmon through August 31 and coho salmon in September.

During late July through mid August, pink and chum salmon runs are peaking. The fishery is usually closed during mid and late August to top off escapements and is opened again in September to harvest coho salmon. Traveling sockeye salmon are moving through the area during the entire season.

Through July 25 as near as possible to 6 percent of the total estimated Chignik destined sockeye salmon catch is allowed to be taken in that portion of the Southeastern District Mainland located outside the Northwest Stepovak Section. However, if it appears that the Chignik Area sockeye salmon catch will not reach 600,000 through July 25, then there will be no commercial fishery targeting Chignik sockeye salmon in the Southeastern District Mainland or in the Cape Igvak Section of the Kodiak Area. No fishing targeting Chignik stocks in the Southeastern District Mainland or Cape Igvak fisheries is allowed until the run passing through those locations is assessed to be in excess of escapement needs. The assessment is made at Chignik.

The total Chignik destined sockeye salmon catch is estimated by adding 80 percent of the Southeastern District Mainland (excluding Northwest Stepovak Section), catch to 80 percent of the Cape Igvak catch plus the entire Chignik Area sockeye salmon catch.

The present management plan was first used for the Southeastern District Mainland during the 1985 season. A similar plan has been used at Cape Igvak since 1978.

Historically, the Southeastern District Mainland fishery has produced minor harvests. During 1974 through 1977, the fishery was open on a day to day basis with Chignik Lagoon. During some years, such as 1977 when little fishing was required to harvest large runs

in Chignik Lagoon and daily interception rates were low, the result was a disastrous season for Southeastern Mainland fishermen.

For the 1978 season, the Board of Fisheries allowed three fishing days per week in the Southeastern District Mainland fishery through July 10 and made set gill nets the only legal gear during that period. Interception rates were low despite strong Chignik runs and catches were poor for the few set gill netters in the Southeastern Mainland fishery. Up through 1978, a maximum of 12-15 set gillnetters participated in this fishery.

During the winter of 1978-79, the Board of Fisheries increased fishing time to five days per week but specified that not more than 60,000 estimated Chignik sockeye salmon could be harvested through July 10. However, the fishery could be closed if it became apparent that a closure was needed to assure the attainment of Chignik escapement requirements. Also, if the Chignik Area catch exceeded 1,000,000 sockeye salmon before July 10, the Southeastern District Mainland fishery could continue beyond the 60,000 fish ceiling. This provision was a major reason for the record high harvest in 1984.

During 1979 through 1982 Southeastern District Mainland fishermen experienced good seasons even though closures were needed at times because of weak Chignik escapements. During this period, gear level increased to 20-25 set gillnetters.

During 1983, the gear level did not change drastically but the fishery demonstrated its ability to catch a large number of fish during a short period of time when the July 7-8 total sockeye salmon catch was approximately 49,000. The 1983 season was an outstanding one for Southeastern District Mainland fishermen with the season estimated interception of Chignik destined sockeye salmon reaching 217,000. Most of the sockeye salmon were harvested between July 10 and August 10.

The 1984 season saw a dramatic increase of set gill net gear, with the total reaching approximately 48. Several of the gill net permit holders also held purse seine permits and fished gill net gear only during part of the season. Consequently, there were about 43 full time set net fishermen. Due to the huge early Chignik run, the large number of these fish available in the Southeastern District Mainland, and the large amount of gear, only six days were required to harvest 60,000 estimated Chignik destined sockeye salmon. However, the fishery was closed for only three days before the Chignik catch reached 1,000,000 sockeye salmon. The Southeastern District Mainland fishery was reopened on June 14 using the fishing periods listed in the regulation book (5 days/week).

It was anticipated that the 1984 second Chignik sockeye run would be very strong. This later proved to be incorrect. The Chignik second run escapement goal was reached only after considerable curtailment of the Southeast Mainland, Chignik, and Cape Igvak (Kodiak Area) fisheries during mid July.

The 1984 Southeastern District Mainland interception of Chignik destined sockeye salmon through July 25 was 423,000.

In addition to the gear increase, another possible major reason for the large sockeye salmon catches in the Southeastern District Mainland fishery in 1983, 1984, and 1986 appears to be an increase in the proportion of the Chignik run migrating through this area rather than coming from the east. The present management strategy described earlier, was adopted after the 1984 season.

Since the current management plan has been in effect, the Southeastern District Mainland harvest of Chignik destined sockeye salmon has ranged from 0.9% to 9.1% and averaged 6.4% (Table 8). For further details regarding the Southeastern District Mainland fishery check the State of Alaska commercial fishing regulations

under 5 AAC 09.360. SOUTHEASTERN DISTRICT SALMON MANAGEMENT PLAN in this report, page 244.

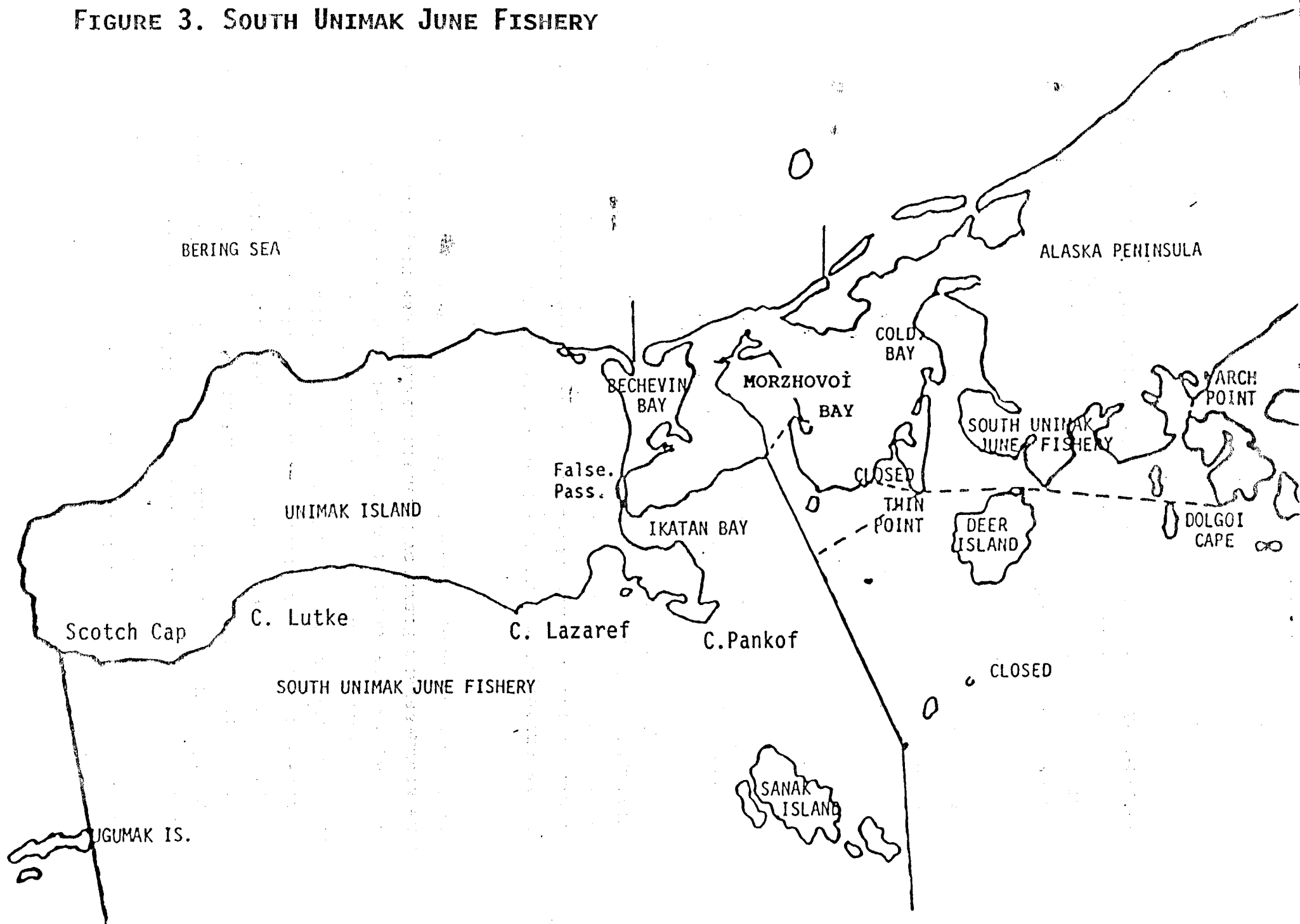
### **South Unimak-Shumagin Islands June Fishery**

Tables 12-27 contain data regarding the South Unimak and Shumagin Islands June fisheries and the amount of gear used in the Alaska Peninsula and Aleutian Islands Areas.

The South Unimak (Figure 3) and Shumagin Islands June fisheries date back to at least 1911. The dominant stocks targeted by these fisheries are Bristol Bay bound sockeye salmon, which has caused controversy between Peninsula-Aleutian and Bristol Bay fishermen for many years. During the late sixties, the South Unimak-Shumagin fisheries were open to fishing seven days per week regardless of Bristol Bay run strength. This caused many debates at Fish and Game Board meetings, with special meetings occurring over this one issue during the early seventies. South Unimak-Shumagin June management strategy was decided on a year by year basis during 1972-74 due to very low anticipated Bristol Bay sockeye salmon returns.

Beginning in 1975, the Alaska Board of Fisheries implemented an allocation plan where the South Unimak-Shumagin Islands June fisheries would be managed on guideline harvest levels allocated by the basis of predicted Bristol Bay inshore sockeye salmon harvests. Based on historical catch information, 6.8 and 1.5 percent of the forecasted inshore Bristol Bay harvest was allocated to the South Unimak and Shumagin Islands June fisheries, respectively. To reduce the possibility of overharvesting any segment of the Bristol Bay run, the guideline harvest level was allocated to discrete time periods based on historical catch data. The allocation in percent by time period is listed as follows:

FIGURE 3. SOUTH UNIMAK JUNE FISHERY



	<u>South-Unimak</u>	<u>Shumagin Islands</u>
June 1 - 11	5%	9%
12 - 18	29%	28%
19 - 25	51%	41%
26 - 30	15%	22%
Totals	100%	100%

If the guideline harvest for an individual time period is not reached, the unharvested portion is lost to the fishery. If the guideline harvest for an individual time period is exceeded, the overharvest is subtracted from the total season allocation.

Chum salmon are taken incidental to sockeye salmon during the South Unimak-Shumagin Islands June fisheries. In 1982 an unusually large harvest of approximately 1.1 million chum salmon along with a failing fall Yukon River chum salmon run brought pressure from fishermen in the Arctic-Yukon-Kuskokwim (A-Y-K) Region to curtail or eliminate the fishery. Unlike the sockeye salmon which are predominantly bound for one area (Bristol Bay), chum salmon are headed for a variety of areas ranging from Japan to Kotzebue to Prince William Sound.

In an effort to limit the chum salmon by-catch, the Board of Fisheries in 1984 placed further restrictions on the fishery. The new restrictions consisted of allowing no more than 96 hours of fishing during a seven day period and no more than 72 consecutive hours. This regulation allowed for closed fishing periods (referred to as windows) between open periods to increase the opportunity for chum salmon to escape.

During 1986 only, the following additional restrictions were used.

1. No fishing before June 11.
2. No fishing during June 26-30 and the loss of that period's sockeye salmon allocation.
3. A 400,000 chum salmon catch ceiling.

These restrictions plus a low availability of sockeye salmon resulted in only 470,000 of the 1,107,000 sockeye allocation being taken.

During the fall 1986 Board of Fisheries meeting, the Board adjourned (with three members resigning) without taking any action on the South Unimak-Shumagin Islands June fisheries. The regulations during 1987 were the same as during 1984-85.

A tagging program was carried out during 1987, indicating that chum salmon go to a variety of places after passing the South Peninsula in June. The Yukon River fall contribution was small during this year. Details of the study have been printed in Alaska Department of Fish and Game Fishery Research Bulletin No. 91-01.

During the spring 1988 meeting, the Board of Fisheries placed a 500,000 (fish) chum cap on the South Unimak-Shumagin Islands June fisheries (once a total of 500,000 chums are harvested the fishery will be closed). It would be very difficult or impossible to harvest the sockeye allocation during many years due to the chum cap. During this year, the South Unimak sockeye salmon harvest was reduced by approximately 669,000 fish due to the 500,000 chum cap. The 669,000 reduction is in addition to the estimated reduction of 117,000 sockeye that would have been caused by other restrictions (no more than 96 hours to be fished in any 7 day period nor more than 72 consecutive hours). The Shumagin fishery harvested its 1988 sockeye salmon allocation.

In 1989, South Unimak and Shumagin Islands fishermen did harvest their June sockeye salmon allocations. However, this was due to the Bristol Bay forecast (and consequently the South Unimak and Shumagin quotas) being low. If the Bristol Bay inshore sockeye harvest had been perfectly predicted, the South Unimak fishery would have fallen approximately 400,000 fish short of its sockeye salmon allocation, due to the 500,000 salmon chum cap. Sockeye salmon catch rates were so high in the Shumagins that this fishery



could have easily taken its allocation if the Bristol Bay harvest had been perfectly forecasted before the chum salmon ceiling was reached.

After the 1989 season, the Board of Fisheries made the following changes to the South Unimak and Shumagin Islands June fisheries:

- (1) The starting date of the fishery was delayed until June 13 as the chum salmon percentage is normally higher during early June.
- (2) The chum salmon ceiling for both fisheries combined was raised from 500,000 to 600,000.
- (3) The "window regulations" were eliminated as there did not seem to be a need for both a chum salmon ceiling and windows.
- (4) The sockeye salmon allocation periods and allocations were changed and are presently the same for each fishery.

June 13-18	35%
June 19-25	45%
June 26-30	<u>20%</u>
TOTAL	100%

If catches in either fishery fall below the guidelines in the June 13-18 period, those unharvested sockeye salmon up to a maximum of five percent of the total allocation for that fishery may be harvested during the June 19-25 period. The June 26-30 period cannot be used to make up for underharvests during the first two periods. Available information and thinking was that the sockeye salmon stock composition between the first two periods was very similar, however the June 25-30 stock composition at South Unimak-Shumagins may be dominated by fewer and later stocks.

- (5) Unlimited seine leads were eliminated at South Unimak and leads of 50 to 150 fathoms are the only legal lengths for the entire Alaska Peninsula.
- (6) For the first time, maximum depth restrictions were placed on seine and gill net gear. For the entire Alaska Peninsula Area seine depth may not exceed 375 meshes in depth. Seine

mesh may not exceed 3-1/2 inches except the first 25 meshes above the lead line may not be more than 7 inches. No gill net gear used along the South Peninsula may exceed 90 meshes in depth.

- (7) The area comprising the South Unimak fishery was extended to include the following portions of the Southwestern District located outside the Ikatan Bay Section:

- (a) all waters north and west of a line from Cape Pankof Light to Thin Point.
- (b) all waters enclosed by a line from Thin Point to Stag Point on Deer Island to Dolgoi Cape and from Bluff Point on Dolgoi Island to Arch Point.

In 1990, sockeye salmon were not available (it is not known what impact the reduction in gear had on the harvest) in large numbers at either the Shumagins or South Unimak despite the fact that Bristol Bay experienced one of its largest runs on record. Windy weather plagued fishing operations but fish abundance also seemed low, especially in view of the huge run that arrived in Bristol Bay. The Shumagin Islands sockeye salmon harvest was 256,000 fish (guideline harvest level 240,000). The Shumagin Islands were open to fishing a total of 184 hours during 9 days in June. At South Unimak, the harvest was 1,091,000 (1,087,000 allocation). The South Unimak June fishery was open to fishing for 269 hours during 13 days.

A total of 64,000 chum salmon were caught in the Shumagin Islands and 455,000 were caught at South Unimak for a combined total of 519,000 chum salmon.

If the Bristol Bay sockeye run had been perfectly forecasted, the Shumagin Islands and South Unimak quotas would have been 497,000 and 2,255,000 respectively. However, due to the 600,000 chum ceiling, the Shumagin Islands fishery would have fallen

approximately 35,000 sockeye salmon short of its corrected quota while South Unimak would have fallen approximately 1,050,000 sockeye salmon short.

With no chum salmon ceiling, the Shumagin Islands fishery would have easily taken its sockeye salmon allocation in 1990 with a total chum salmon catch of approximately 135,000. Even without a chum salmon ceiling, the South Unimak fishery would have only taken about 1.6 million of its corrected allocation while catching approximately 700,000 chum salmon.

In 1991, the Shumagin Islands June sockeye salmon harvest was 333,000, slightly under the allocation of 347,000. The Shumagin Islands June fishery was open 88 hours during 5 days. A total of 102,000 chum salmon were harvested in the Shumagins.

The 1991 South Unimak June sockeye salmon catch was 1,216,000 which was well under the guideline harvest level of 1,573,000. The reason for the guideline harvest level not being reached was the chum salmon cap being exceeded. The South Unimak chum salmon harvest was 669,000 which brought the combined South Unimak-Shumagin Islands chum salmon catch to 771,000. The South Unimak fishery was open 158 hours during 8 days in June. The 1991 season is discussed in more detail later in the text.

It is not known at this time what impact reduction in gear depth had on gear efficiency or if the gear reduction caused a reallocation between gear types.

Test fishing in the Shumagin Islands Section during June was instituted in 1990 to collect data for the South Peninsula salmon management staff to determine sockeye to chum salmon ratios and salmon average weights by species. ADF&G attempts to have commercial salmon fishing periods when the catch of sockeye salmon is expected to be high in relation to a low chum salmon catch.

Test fishing occurs before the June 13 regulated opening date and between commercial salmon fishing periods to determine the most favorable periods for sockeye to chum salmon ratios. Test fishing was standardized to purse seine gear making 20 minute sets at Popof Head, Middle Set, and Red Bluff; additional sets are made if time allows. During off-loading, the catch is separated by species, counted, and weighed. Purse seine vessels are selected randomly from a list of skippers that have expressed an interest in the test fishery. The skipper and usual crew are aboard as well as an ADF&G observer. Test fish results are listed in Table 30.

In 1990, test fishing occurred on June 10 and resulted in a 3.8:1.0 sockeye to chum salmon ratio and the fishery was opened on June 13.

In 1991, test fishing occurred on June 9-13. The ratio of sockeye to chum salmon prior to June 12 was not favorable for a commercial fishing period; the ratio ranged from 0.4:1.0 and 1.9:1.0 sockeye to chum salmon. On June 13 the ratio improved to 3.3:1.0 and on June 14 was 4.7:1.0. The first commercial salmon period occurred on June 15, the commercial ratio was 3.4:1.0. The Shumagin Islands Section was open to commercial salmon fishing on June 15, 17, 18, 20, and 22. Overall, the June Shumagin Islands Section commercial sockeye to chum salmon ratio was 3.2:1.0.

#### **South Peninsula Post-June**

Tables 31-33 contain South Peninsula catch and total run information.

The major species produced by South Peninsula streams are pink salmon. Runs fluctuate dramatically over time due to the magnitude of parent escapements and environmental conditions. During the 1973-91 period, commercial catches have varied (not including June catches) from 36,000 in 1973 to 10,669,000 in 1984 (Table 32). Most systems produce large runs on both even and odd year cycles, however, most of the streams between Cold Bay and Unimak Bight are

basically even year producers. Dry Lagoon and Apollo Creeks on Unga Island also seem to be even year cycle systems. Pink salmon runs usually arrive in force about July 20 and peak about August 1. After August 15-20 the fish quality is usually poor due to water marking.

Chum salmon are the second most important locally produced species along the South Peninsula. Not including June catches, the 1962-91 chum salmon catches ranged from 34,000 fish in 1974 to 1,399,000 in 1986 (Table 33). Chum salmon runs are somewhat more stable than pink salmon due to the presence of more than one age class and the tendency for chum salmon to select spawning locations which are less susceptible to scouring and freezing. Chum salmon runs start earlier and last longer than those of pink salmon and there is a large variation in timing between different chum salmon stocks.

The South Peninsula has numerous sockeye salmon stocks. Most stocks are small although Thin Point and Middle Lagoon (Morzhovoi Bay) have a history of substantial runs during the 1920's and 1930's. It is believed that these two systems can be brought back to their former levels by a good escapement monitoring and enforcement program. Thin Point and Morzhovoi Lakes are suspected of having rearing capacities greatly in excess of the spawning capacities. Therefore the potential to produce substantially larger runs through supplemental methods exists. Orzinski (Orzenoi) Lake is an important contributor to Southeastern District catches.

Post-June South Peninsula sockeye salmon catches are often substantial. Many of the fish are taken in the Southeastern District Mainland fishery which targets on Chignik destined sockeye salmon. However, a substantial number (50,000 to 400,000) are taken annually in the Shumagins and lesser numbers taken throughout the balance of the area. Many of these fish are undoubtedly bound for other areas, although South and North Peninsula streams are contributors.

Most South Peninsula coho salmon are harvested incidentally while the fishery is targeting on pink and chum salmon during mid-July to mid-August. A smaller number are taken during September. The fishery is usually closed during late August to achieve good pink and chum salmon escapements.

Historically, South Peninsula coho salmon catches have demonstrated long periods of different abundance levels. From 1923 through 1946, catches were at a high level, averaging 148,000 fish annually. During 1947 through 1958, the average fell to 50,000 coho salmon. The 1959-77 average South Peninsula coho salmon catch was only 12,000. However catches jumped to an average of 268,000 during 1978-91 (Table 1). The record high catch was 505,500 coho salmon during 1988. It should be pointed out the Aleutian Islands catches were combined with the South Peninsula during 1928 through 1950, however, the Aleutian contribution was probably insignificant based on years when Aleutian catches were kept separate. The record Aleutian Islands Area documented coho salmon catch was 4,400 fish in 1918 and the catch is less than 200 during most years.

Chinook salmon are of minor importance along the South Peninsula averaging only 10,000 fish harvested during 1979-91 (Table 1). There are no chinook salmon streams along the south side of the Alaska Peninsula Management Area and the Chignik River is the only known chinook salmon producer on the Pacific side of the entire Alaska Peninsula.

#### **Aleutian Islands Area**

The Aleutian Islands Area produces runs of sockeye, coho, pink, and chum salmon. However, only pink salmon have proven to be of major commercial importance.

The following islands produce large pink salmon runs during some years:

Unalaska	Atka
Umnak	Adak
Amlia	Attu

Tanaga, Kanaga, and Kiska Islands all have at least one important pink salmon stream.

Except for occasional fishing on Umnak Island during the early 1960's and probably the 1950's, all commercial effort has been confined to Unalaska Island, with the exception of a 1963 Attu expedition.

Aleutian Islands pink salmon runs tend to be much larger during the even year cycle. Unalaska Bay has a history of producing large runs during both odd and even years.

Pink salmon runs are very unstable in the Aleutians. They produce legendary high returns at times and then collapse for no apparent reason.

Aleutian pink and sockeye salmon (within a given age group) tend to be of smaller size than those of Alaska Peninsula stocks.

Prior to 1979, markets were a limiting factor at Unalaska. There was often no market unless pink salmon abundance warranted sending tenders from False Pass or King Cove. Some fish (usually sockeye salmon) were salted by the fishermen. From 1979 to the present, most fish have been processed by buyers at Unalaska-Dutch Harbor or Akutan.

The record Aleutian pink salmon catch was approximately 2.6 million fish during 1980 (roughly 2 million were taken out of Makushin Bay alone).

Unalaska pink salmon runs seem to arrive about the same time as those of the South Peninsula. However there is considerable variation from year to year as to when pink salmon enter Unalaska streams as well as timing between various streams. This is a different situation than found on the South Peninsula where pink salmon entry into streams is less variable. During large runs Unalaska pink salmon may trickle in throughout September.

## North Peninsula

Tables 34-48 contain historical catch and total run information regarding North Peninsula salmon.

All escapement estimates are indexed totals except Bear River and Sapsuk River sockeye salmon 1962-91, Sapsuk River chinook and chum salmon 1962-85, Orzinski sockeye salmon 1990-91, and Ilnik sockeye salmon 1991. The indexed totals are calculated from aerial surveys and are likely lower than the actual totals. Consequently there will be differences after 1984 between figures used in area management reports and those in formally published reports (technical data reports, bulletins, etc.) which use different expansion factors. The indexed totals continue to be used for historical purposes.

Sockeye salmon are the dominant species along the North Peninsula. The major producing systems are Bear River, Nelson Lagoon, Meshik River, Sandy River, Ilnik, and Urilia Bay. Bear River is the top producer with Nelson Lagoon being second. In addition to those listed above, there are numerous smaller producing systems.

North Peninsula sockeye salmon catches averaged 239,500 during 1962-1975, 669,600 during 1976-78, and 1,906,500 during 1979-91 (Table 1). Catches during the 1962-91 period ranged from 172,000 in 1973 to 2,601,000 (record high) during 1985.

Peak North Peninsula sockeye salmon catches are taken during the first 10 days of July. The Urilia Bay return is somewhat earlier. Most returns are complete by the end of July. However, Bear River's return sometimes has a second peak in August and lasts well into September. There is also a later (early August) and smaller sockeye salmon return in Nelson Lagoon. These fish are believed to spawn in lakes (mainly tributaries of the David's River) along the west side of the Nelson Lagoon drainage.



Chum salmon are usually the second most important North Peninsula salmon species. Catches have averaged 394,500 during 1979-91 (Table 1). The record catch was 797,000 fish during 1984.

The major chum salmon producing locations are the Izembek-Moffet Bay, Herendeen-Port Moller Bay, Bear River, and Bechevin Bay Sections. The North Peninsula chum salmon runs (with some variation among stocks) usually begin in June and continue at a steady rate throughout July and early August. Nelson Lagoon's run (occasionally strong) starts in late July and is of short duration while Trader's Cove and Warm Springs chum salmon returns occur during August through early September.

On the average, coho salmon are the third most important commercial salmon species on the North Peninsula although coho salmon are more important than chum salmon during some years. Due to the late timing of the runs, virtually no fishing effort was directed towards North Peninsula coho salmon until 1948, and then only in limited locations. During recent years more stocks have been exploited. However, there are undoubtedly stocks on both sides of the Alaska Peninsula which have not been identified. Escapement information is very limited.

North Peninsula coho salmon catches averaged 33,500 fish per year from 1948 through 1978. The catch jumped dramatically to a 175,700 average during 1979-91, with catches ranging from 75,100 in 1983 to 238,000 in 1982 (Table 1).

Nelson Lagoon is the largest North Peninsula coho salmon producer. Other major runs include Port Heiden, Cinder River, Ilnik, and Swanson Lagoon.

There is some variation among stocks, however coho salmon returns generally begin about August 1, peak during the last two weeks in August and the first week in September, and are essentially over by September 15. However, there are exceptions, for example, the Ocean River coho salmon run seems to peak during late September.

There is a lot to be learned concerning North Peninsula coho salmon stocks.

Chinook salmon are the fourth ranked salmon species in commercial importance along the North Peninsula. However, they are extremely important to some individuals. For example, chinook salmon are one of the two most important species at Port Heiden and are an important contributor to the Nelson Lagoon economy. The record catch was 44,200 fish during 1916. The harvest has averaged 20,100 fish during 1979 through 1988, ranging from 11,700 in 1986 to 30,100 during 1982 (Table 1). The 1989 through 1991 average chinook salmon harvest is 10,900 fish. The reason for the recent decline is unknown but doesn't appear related to parent escapement size.

Nelson Lagoon, Port Moller vicinity and Port Heiden are the major North Peninsula chinook salmon producing locations.

Chinook salmon runs begin during the last week in May, peak during mid and late June then gradually decline until they are essentially over in late July. Most spawning occurs during the first half of August.

On the average, pink salmon are the least important North Peninsula salmon. Returns are quite small and value per fish is lower than the other species. However Bechevin Bay has occasionally produced large pink salmon returns during even numbered years and there was an unusually large run in Herendeen Bay during 1990. The North Peninsula harvest has averaged 66,000 fish during 1982-1991, ranging from 3,000 in 1985 to 518,000 in 1990. The catches in 1978, 1980 and 1990 were the only harvest on record to exceed 65,000 (Table 1).

It is not known why the North Peninsula is not a much larger pink salmon producer. Some of the streams look like good producers and do occasionally receive large enough pink salmon escapements to produce a substantial return. However, the returns normally fail

to build and there likely is a feature in the marine environment which is not conducive to good pink salmon survival. The one area (Bechevin Bay) that has produced most of the larger pink salmon returns possibly should be considered part of the South Peninsula.

#### 1991 SALMON SEASON SUMMARY

##### **Southeastern District Mainland Fishery (SEDM)**

Harvest numbers in the text are the preliminary numbers received inseason from tender reports which were used in the management of the fishery. Harvest numbers presented in tables are final, updated from post-season fish ticket harvest data.

The 1991 preseason forecast for the total Chignik bound harvest for 1991 was 2,360,000 sockeye salmon for the first (Black Lake) run and 890,000 for the second (Chignik Lake) run. This forecast indicated that a fishery would occur in the SEDM fishery targeting Chignik bound sockeye salmon because a harvest of at least 600,000 would occur in the Chignik Management Area, which is a condition of the Alaska Board of Fisheries adopted management plan.

The Chignik Management Area sockeye salmon fishery started on June 11, when the escapement past the weir reached 116,000 sockeye salmon, which was within the desired range for that date. Following the announcement of this first Chignik opening, the Kodiak office announced a 48 hour fishery in the Cape Igvak section beginning at 12:01 a.m. on June 12. An announcement then followed from the Sand Point office for an opening in the SEDM Area for a 36 hour period beginning at 10:00 p.m. on June 13.

Catches and escapement were larger than expected in the Chignik Area. With a total sockeye salmon catch of over 141,000 and total sockeye salmon escapement of 131,000 by June 13, the Chignik Management Area fishing time was extended 24 hours. Southeastern District Mainland fishermen harvested about 9,600 Chignik bound sockeye salmon (5.9% of the total Chignik harvest) during their fishing period. With the large catch and extended fishing time at

Chignik, both the Cape Igvak and the SEDM fishery were extended an additional 48 hours.

The first run remained strong at Chignik, and the fishery at Chignik was extended until June 19. Through June 17, the Chignik Area sockeye salmon harvest was 441,000 salmon, and the area remained open to commercial fishing. With the SEDM sockeye salmon harvest at 55,654 (8.4%) of the total Chignik bound harvest, and the Chignik Area still open to fishing, the SEDM fishery was reopened for a 40 hour period, beginning on June 20 at 6:00 a.m. Southeastern District Mainland fishermen harvested about 40,800 Chignik bound sockeye salmon (51,000 total sockeye salmon) during this opening.

As the June 25 - July 9 overlap period approached, a 24 hour fishery beginning at 1:00 p.m. on June 23 was announced at Chignik. In anticipation of a substantial Chignik Area harvest, the SEDM fishery notice time was reduced from 24 to 3 hours as a provision to allow SEDM fishermen fishing time before the beginning of the June 25 overlap period.

A statewide drop in salmon fishing prices and striking fishermen in other areas resulted in the Chignik seiners striking on June 23. The Chignik Seiners Association boycotted processors who would not meet their sockeye salmon delivery price of \$0.80 per pound. This resulted in the daily processing capacity being reduced to 340,000 pounds. The Chignik Seiners Association co-oped the fishery (restricted to the lagoon) allowing rotation of 10 vessels per shift until the daily processing capacity quota was met. The co-op fishery continued until July 5, when all processors agreed upon \$0.85 per pound for sockeye salmon. During the boycott, the Chignik Seiners Association blocked the Chignik River with doubled seines stretched from bank to bank to prevent over-escapement.

In accordance with Alaska Statute 5 AAC 39.200 (b), over-escapement counted past the Chignik weir during the boycott was counted as salmon harvested by Chignik Area Fishermen. Therefore, the SEDM

opened for 16 hours on June 25. Southeastern District Mainland fishermen harvested a total of 21,263 sockeye salmon, of which 17,010 were Chignik bound sockeye salmon. The cumulative SEDM harvest of Chignik bound sockeye salmon was 117,000 salmon or 9.3% of the total Chignik bound sockeye salmon harvest of 1,268,000 salmon (without over-escapement added) going into the overlap period (June 26 to July 9).

During the overlap period, the Orzinski Lake sockeye salmon run in the Northwest Stepovak Section was much stronger than expected (Table 11). Sockeye salmon began passing the weir on June 19. By July 4, the sockeye salmon escapement into Orzinski Lake was about 9,500, with several thousand more salmon at the mouth of the river. The escapement goal for Orzinski through July 16 was 10,000, and a 17 hour opening was announced for July 6 in the Northwest Stepovak Section to harvest the surplus sockeye salmon at Orzinski. This opening was concurrent with the set gill net opening in the Shumagin Islands Section to disperse fishing effort. Also, as the escapement goal for Orzinski was assured, the closed water area at the mouth of the river was reduced from 1,000 to 500 yards.

By July 8, Chignik Area fishermen had harvested a total of 1,500,000 sockeye salmon, which included excess escapement during the June 23 - July 5 strike. The SEDM fishery harvest of total Chignik bound sockeye salmon was 117,000 fish or 5.5% of the total. With the Chignik Area harvest over 600,000 sockeye salmon, and the preseason forecast and present run strength indicating a harvestable surplus, the SEDM fishermen were put on 4 hour notice on July 8 in anticipation of an opening on July 10 (usually the first day of potential fishing in the SEDM fishery after the overlap period, June 26 to July 9).

The SEDM opened at 8:30 p.m. on July 9 for a 25.5 hour fishing period, and harvested 22,642 sockeye salmon (18,114 Chignik bound). The Northwest Stepovak Section was already opened and scheduled to close at the same time. However, as the escapement at Orzinski reached 20,800 fish by July 10, the Northwest Stepovak Section

fishery was extended an additional 48 hours through July 12, resulting in a harvest of 31,000 sockeye salmon.

The July 9 - 10 fishing period was the final fishing period targeting Chignik bound sockeye salmon through the end of the management plan date on July 25. An additional 1,698 sockeye salmon (958 Chignik bound fish) were harvested incidentally in a July 15 - 16 opening targeting local chum salmon in the Stepovak Flats Section. This was also the only opening that the seine fleet harvested Chignik bound sockeye salmon in the SEDM during the Southeastern District Management Plan time period.

At Orzinski Lake, escapement had reached 28,188 sockeye salmon by July 12. The Northwest Stepovak Section was open from July 12 - 16 for 54.5 hours, resulting in a harvest of about 22,000 sockeye salmon. The final opening during the Southeastern District Management Plan period for the Northwest Stepovak Section occurred from July 21 - 23, resulting in a harvest of about 14,000 sockeye salmon. The weir was removed on July 19 with the sockeye salmon escapement at 35,219 salmon. Subsequent aerial surveys added to the weir counts showed a total escapement into Orzinski Lake of about 40,000 sockeye salmon.

The total sockeye salmon harvest through July 25 in the SEDM fishery was 289,727. The breakdown of the harvest is as follows:

Northwest Stepovak Section:	98,834	(100% local)
Chignik bound sockeye salmon:	152,714	(6.2% of total Chignik harvest)
Remainder of Southeast District Mainland fishery	<u>38,179</u>	
Total SEDM fishery sockeye salmon Harvest through July 25:	289,727	

Since the current management plan has been in effect, the SEDM catch of Chignik destined sockeye salmon has ranged from 0.9% to 9.1% and averaged 6.4% (Table 8). The 1991 SEDM catch (excluding the Northwest Stepovak Section) through July 25 accounted for 6.3% of the total Chignik bound harvest through July 25.

The season total harvest in the entire SEDM fishery in 1991 was 2,761,957 salmon, including 1,063 chinook, 396,655 sockeye, 49,873 coho, 2,119,216 pink and 195,150 chum salmon.

#### **1991 South Unimak-Shumagin Islands June Fishery**

In 1991, the fisheries were delayed until June 15 in an attempt to minimize the chum salmon harvest. Test fishing in the Shumagin Islands Section on June 9 resulted in a sockeye to chum salmon ratio of 1.1 to 1.0. The ratio of sockeye to chum salmon improved to 4.7 to 1.0 by June 13. The percentage of chum salmon is normally high during early June and is lower when the sockeye salmon runs are peaking during mid and late June. The Shumagin Islands Section fishery was open during five days and harvested 333,300 sockeye and 102,600 chum salmon through June 22 (Table 12). The in-season verbal reports indicated that the June catch was 342,000 which was too close to the quota of 347,000 to allow an additional fishing period.

At South Unimak, the sockeye salmon harvest through June 20 was 618,000 fish with a chum salmon catch of 295,000. The catch on June 20 was 225,000 sockeye and 115,000 chum salmon. At this time, it was obvious that the 1,573,000 South Unimak sockeye salmon quota would not be taken without first reaching the 600,000 chum salmon cap, unless the ratio of sockeye to chum salmon drastically improved. The next fishing period was delayed until 6:00 a.m. June 23 to run through 3:00 p.m. June 24 in hopes that sockeye salmon abundance would greatly increase and the chum salmon catch would drop. The June 23 harvest was 189,000 sockeye salmon and 49,000 chum salmon, for a sockeye to chum salmon ratio of 3.9 to 1.0, by far the best ratio observed since the season started at South Unimak.

The cumulative South Unimak-Shumagin Islands Section chum salmon harvest through June 23 was 447,000. It was decided to extend the fishing period an additional 24 hours until 3:00 p.m. June 25. It was believed that even if the chum salmon harvest doubled the June 23 catch, the 600,000 cap would not be exceeded. Another factor

taken into consideration in extending this fishery was the large number of chum salmon that may appear during the end of June. Large numbers of chum salmon appeared at Cape Lutke in 1981 during the end of June (the June 27-30, 1981 sockeye to chum salmon ratio was 0.5 to 1.0). Because of the potential of larger numbers of chum salmon late in June, it seemed safer to be more liberal earlier and try to minimize or avoid fishing at the end of June.

After receiving processor reports during the morning of June 25, it was discovered the June 24 catch was 262,000 sockeye salmon and 188,000 chum salmon. The fishery was closed at noon, three hours prior to the scheduled 3:00 p.m. closure. The combined June 24-25 catch was 408,600 sockeye salmon and 324,700 chum salmon. The cumulative South Unimak sockeye salmon catch was 1,215,658 (357,342 under the quota) while the South Unimak-Shumagin Islands chum salmon catch of 771,390 was 171,390 over the cap. If the Bristol Bay sockeye salmon catch had been accurately forecasted, the actual South Unimak sockeye salmon harvest would have fallen 568,000 short of the allocation due to the chum salmon cap.

The Cape Lutke and Sanak Island combined catch during June 24-25 was 239,000 sockeye and 256,000 chum salmon for a sockeye to chum salmon ratio of 0.9 to 1.0. The sockeye to chum salmon ratio for the balance of the area during the same period was 2.5 to 1.0.

At Cape Lutke during June 24-25, purse seine fishermen caught 164,000 sockeye and 194,000 chum salmon, for a sockeye to chum salmon ratio of 0.9 to 1.0, while drift gillnet fishermen caught 64,000 sockeye and 44,000 chum salmon (1.5 sockeye to 1.0 chum salmon). There were no drift gill net landings from Sanak Island.

Average weight of seine caught chum salmon dropped from 6.3 pounds on June 23 to 5.7 pounds on June 24-25. Some of the seine caught chum salmon on June 24-25 were said to be "skinny snakelike fish with no roe". During July, there are sometimes large numbers of chum salmon as described above in the vicinities of Sanak Island, Cape Lutke, Cape Lazaref, and in the eastern portion of the



Aleutian Islands Area. These fish are of little or no value and of such numbers that the Department has had to close these areas. Past closures include: Cape Lutke in 1983, Akutan District in 1985, and the Otter Cove and Sanak Islands Section to seining in 1989 and 1990.

For the June fishery, the percentage of the harvest by gear type for sockeye and chum salmon are as follows:

	<u>South Unimak</u>		<u>Shumagin Islands</u>	
	<u>Sockeye</u>	<u>Chum</u>	<u>Sockeye</u>	<u>Chum</u>
Seine	53.5	61.1	80.6	93.3
Drift Gillnet	44.4	38.3	-	-
Set Gillnet	2.1	0.6	19.4	6.7

Table 22 shows the 1977-1991 percentage of the total catch by gear type for sockeye and chum salmon for both South Unimak and the Shumagin Islands Section.

The impact of the gear depth limitation on gear efficiency is not known at this time. It is also not known the amount, if any, reallocation between gear types due to depth restrictions. Factors such as weather, fish distribution, and fish abundance can influence the catch between gear types to a greater degree than two years of harvest data is able to reflect. The Department has initiated no studies which would determine if there is a reallocation.

#### **South Peninsula Post June**

During July and August, a total of 2,000 chinook, 550,000 sockeye, 293,000 coho, 9,997,000 pink and 800,000 chum salmon were harvested along the entire South Peninsula. During September, another 20,000 sockeye, 19,000 coho, and 16,000 chum salmon were harvested. These figures include fish taken in the Southeastern District Mainland fishery.

The pink salmon harvest was the second highest (to 1984) on record and was the record high odd numbered year catch. The indexed total escapement of 2,947,000 was the second highest (to 1984) on record and was the record high odd numbered year escapement. Complete escapement records do not exist prior to 1962.

The chum salmon harvest of 816,000 was under 1986-90 average of 994,000 while the indexed total escapement of 588,000 exceeded the previous five year average of 465,000.

The post June sockeye salmon catch (excluding salmon caught under the Southeastern District Management plan through July 25) was 544,000. This was a decrease from the previous five year average of 763,000 sockeye salmon harvested. The sockeye salmon indexed total escapement of 125,000 was the highest since at least 1962. The average escapement during the previous five years was 68,000. The 1991 catch would have been much higher had the seine fishery not been curtailed during early and mid July due to the presence of immature salmon.

In 1991, 320,300 coho salmon were caught along the South Peninsula. This was slightly under the 1986-90 average of 343,000. Escapement information for coho salmon is incomplete. Most coho salmon are caught incidental to fishing periods targeting pink and chum salmon during July and early August. Due to high numbers of coho salmon present in Shumagin test net sets, higher than usual numbers of coho salmon caught in Pavlof Bay, and a high drift gill net harvest at South Unimak it appeared that summer coho salmon abundance was high. Had the seine fishery not been curtailed by the presence of immature salmon, a record coho salmon harvest may have occurred.

#### **1991 Immature Salmon Problems**

Immature salmon during July were a problem for the third year in a row. Immature salmon are gilled in seine web, forcing closure of the seine fishery in some locations. A separate section later in this report (pages 215-236), "The Incidence of Immature Salmon in

South Peninsula Purse Seine Fisheries 1963-91", gives a history of the immature salmon problem and describes the 1991 situation.

### **Aleutian Islands**

As during most odd numbered years pink salmon abundance was low in the Aleutian Islands. No pink salmon and only 800 sockeye salmon were harvested. Escapement information was only collected from foot surveys along the Unalaska road system. It seemed that neither of the two air taxis based at Unalaska-Dutch Harbor were willing to make their aircraft available for charter.

### **1991 North Peninsula**

The North Peninsula sockeye salmon harvest of 2,392,100 fish was only 23,800 under the 1991 catch, and was the fourth largest on record. The indexed total escapement was 1,317,300 with all systems reaching or exceeding their goals. The 1986-90 average sockeye salmon escapement goal was 720,000. The reasons for the large 1991 escapement was (1) a fishermen's strike during early July and (2) a large number of Bear River late run fish went through nets, due to small fish size.

Approximately 44 percent of the total North Peninsula sockeye salmon harvest was taken in the Bear River Section. The combined Three Hills and Ilnik Sections harvest accounted for 36 percent of the total harvest.

The chum salmon run was stronger than those of 1989 and 1990 but was the fourth weakest run since 1979. The harvest was 191,300 chum salmon while the indexed total escapement was 303,300. Escapements were generally well distributed throughout the area. One exception was Frank's Lagoon which outlet was dry during part of the summer. In recent years, the outlet to Frank's Lagoon has filled in to the point where the lagoon appears to be a lake. Although fish are frequently seen entering the lagoon, very few are observed in the spawning creek above the lagoon. The water in the lagoon is usually too dark for observing fish.

The coho salmon harvest of 217,400 was the fourth largest on record. Port Heiden and Cinder River (locations almost totally consisting of Area T permit holders) accounted for approximately 88,000 of the total. Escapement information is incomplete, however escapements were satisfactory to excellent in those locations where it was possible to survey.

The North Peninsula chinook salmon harvest was 9,400 which was the lowest since 1977. The indexed total escapement of 9,600 was the fourth lowest since 1977. Chinook salmon runs have been declining in recent years, but the reason for the decline is unknown (Figure 4).

The North Peninsula is not an important pink salmon producer during odd numbered years and rarely produces substantial runs during even numbered years. The 1991 harvest was only 4,200 fish.

# NORTH PENINSULA HISTORIC FISHERY

## KING SALMON

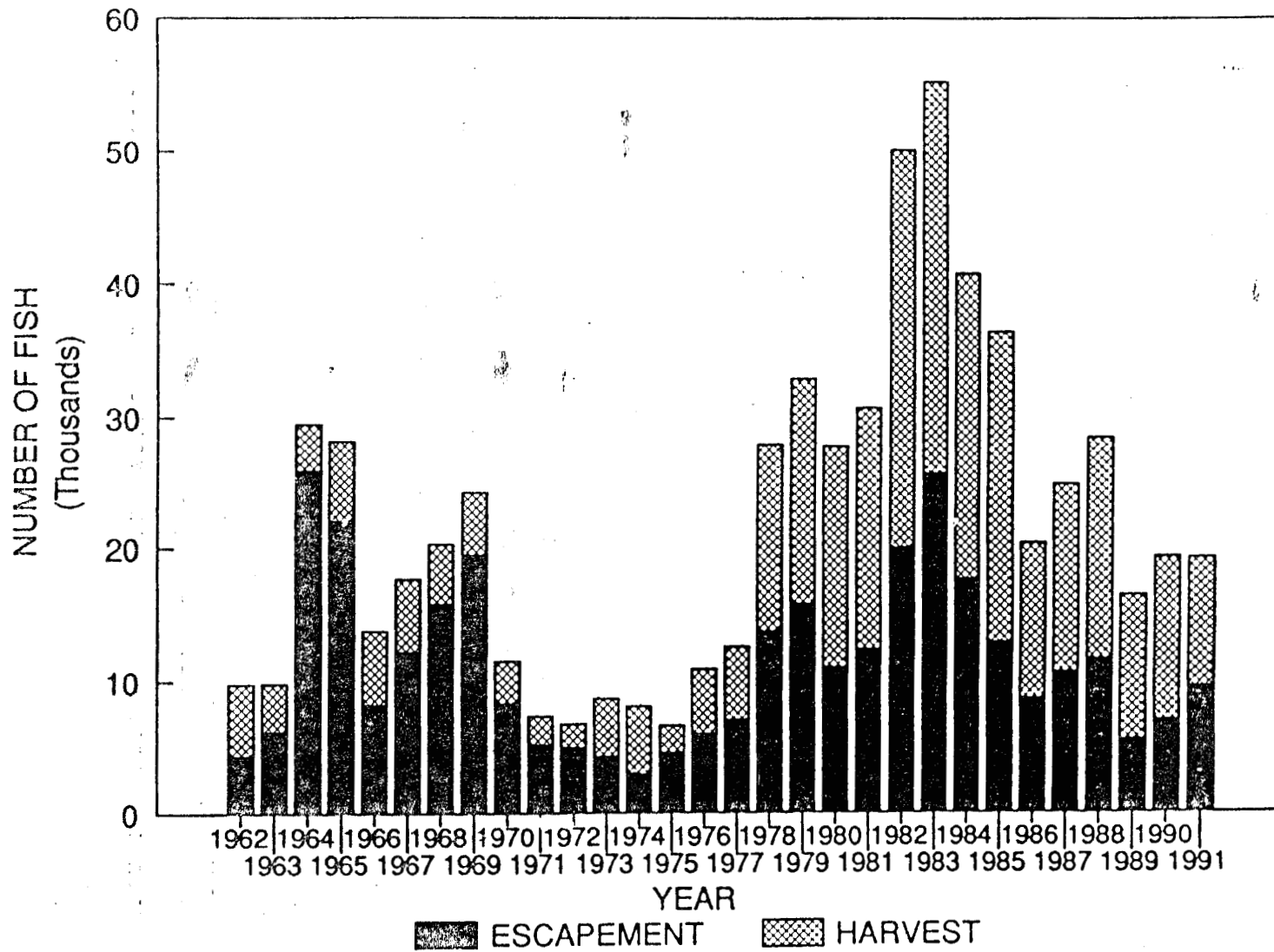


Figure 4. North Peninsula chinook salmon runs, 1962-1991.

## SUBSISTENCE SALMON FISHERY

Subsistence salmon catches are estimated from permit return information. Information from returned permits are used to extrapolate catches for all permits issued. There are undoubtedly many fish kept from commercial catches and are not reported.

Permits are not required to subsistence fish in the Akutan and Umnak Districts. Consequently no catch estimates are made by the Commercial Fisheries Division for those districts.

Subsistence salmon fishing is not allowed in the Adak District. However a personal use salmon fishery is allowed on Adak and Kagalaska Islands for Alaska residents and military personnel (and their dependents) who have been stationed in Alaska for the preceding 12 months.

1991 subsistence and personal use catch information is presented in Tables 72-80.

### METHODS OF CALCULATING INDEXED TOTAL ESCAPEMENTS

Unusual circumstances may cause occasional deviation, but basically the methods of calculating estimated indexed total escapements without the use of a weir or tower are as follows:

**Chinook, Sockeye, Coho:** These species tend to have a much longer stream life than pink and chum salmon. Therefore, the estimated total escapement is usually the peak escapement count. Carcasses are included. However, it is recognized that there are problems in large systems such as Ilnik and Caribou-David's Rivers. The basic problem on large systems is the length of time, expense, and fuel needed to do a thorough survey yet meet more pressing obligations.

The Caribou and David's River complex (including Coastal and other nearby lakes) is so massive a system for the size of its runs that complete surveys will probably never be done. The timing if such surveys would have to coincide with the peak of the South Peninsula pink and chum fisheries.

In the case of Ilnik, when a weir is not in place, numerous management surveys are done while the fishery is being managed for the Ilnik stocks. However, the peak surveys occur after the fishery has tapered off and most effort must be devoted to South Peninsula runs. However, Ilnik is a very important run and more effort is being made to accurately monitor it. The Ilnik sockeye run is of longer duration than the majority of unweired (or towered) North Peninsula sockeye streams. Ilnik sockeye also seem to have a shorter stream life than those in most other shallow water systems. Consequently, Ilnik requires at least two complete surveys or at least one complete survey with fish in the lower area during subsequent surveys being added to a peak count for the system. Many of the Ilnik figures listed in this publication are minimal.

**Pink and Chum Salmon:** A 21-day stream life is used to calculate total pink and chum escapements. Fish in saltwater during the final survey are added:

<u>EXAMPLE</u>			
<u>Survey Date</u>	<u>Pinks</u>	<u>Chums</u>	<u>Fish at Mouth</u>
July 10	5,000	0	5,000P
17	25,000	0	10,000P
August 1	100,000	0	10,000P
15	150,000	0	12,000P
			1,000CH
September 1	150,000	5,000	2,000CH
Estimated Total	255,000	7,000	

The estimate of 21 days stream life was used because significant numbers of carcasses seem to appear about three weeks after adult pinks and chums first appear in Alaska Peninsula streams. It is

recognized that stream life can vary, however this method is easily duplicated and is comparable from year to year. Variation in stream life is likely a much smaller factor than variation between observers.

With the exception of several small streams, there are no problems of streams being obscured by brush or trees in the Alaska Peninsula and Aleutian Islands Areas. With several exceptions, visibility of spawning grounds is outstanding during periods of normal water flow and clear weather.



Table 1. Alaska Peninsula/Aleutian Islands Areas Salmon Catches (Numbers of Fish) (Page 1 of 7)

YEAR	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1906 South Peninsula	0	0	0	0	0	0
North Peninsula	1,500	135,000	0	0	0	136,500
Aleutians	0	0	0	0	0	0
Total	1,500	135,000	0	0	0	136,500
1907 South Peninsula	0	0	0	0	0	0
North Peninsula	1,700	66,500	3,200	1,500	0	72,900
Aleutians	0	0	0	0	0	0
Total	1,700	66,500	3,200	1,500	0	72,900
1908 South Peninsula	0	69,400	0	0	0	69,400
North Peninsula	1,500	166,900	0	0	0	168,400
Aleutians	0	0	0	0	0	0
Total	1,500	236,300	0	0	0	237,800
1909 South Peninsula	0	108,400	7,200	0	0	115,600
North Peninsula	1,500	143,000	0	0	1,000	145,500
Aleutians	0	0	0	0	0	0
Total	1,500	251,400	7,200	0	1,000	261,100
1910 South Peninsula	0	46,300	5,500	0	0	51,800
North Peninsula	0	0	0	0	0	0
Aleutians	0	0	0	0	0	0
Total	0	46,300	5,500	0	0	51,800
1911 South Peninsula	0	240,800	12,400	25,200	83,000	361,400
North Peninsula	0	129,600	0	0	0	129,600
Aleutians	0	9,300	0	0	0	9,300
Total	0	379,700	12,400	25,200	83,000	500,300
1912 South Peninsula	0	334,400	27,000	40,400	195,000	596,800
North Peninsula	900	252,700	11,000	0	2,400	267,000
Aleutians	0	0	0	0	0	0
Total	900	587,100	38,000	40,400	195,000	863,800
1913 South Peninsula	1,800	299,700	0	0	7,000	308,500
North Peninsula	600	888,800	18,700	0	2,000	910,100
Aleutians	0	0	0	0	0	0
Total	2,400	1,188,500	18,700	0	9,000	1,218,600
1914 South Peninsula	600	628,900	9,900	311,000	221,100	1,171,500
North Peninsula	8,100	1,325,100	0	0	0	1,333,200
Aleutians	0	0	0	0	0	0
Total	8,700	1,954,000	9,900	311,000	221,100	2,504,700
1915 South Peninsula	4,800	367,900	16,200	120,100	333,100	842,100
North Peninsula	14,000	1,974,300	0	0	54,800	2,043,100
Aleutians	0	0	0	0	0	0
Total	18,800	2,342,200	16,200	120,100	387,900	2,885,200
1916 South Peninsula	6,800	730,900	34,100	576,100	508,900	1,856,800
North Peninsula	44,200	1,974,700	0	2,600	191,400	2,212,900
Aleutians	0	76,500	1,200	180,300	100	258,100
Total	51,000	2,782,100	35,300	759,000	700,400	4,327,800
1917 South Peninsula	6,400	1,486,100	4,600	72,100	415,500	1,984,700
North Peninsula	20,000	679,600	6,800	600	90,300	797,300
Aleutians	0	70,400	3,800	600	23,100	97,900
Total	26,400	2,236,100	15,200	73,300	528,900	2,879,900

continued

Table 1. Alaska Peninsula/Aleutian Islands Areas Salmon Catches (Numbers of Fish) (Page 2 of 7)

YEAR		CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1918	South Peninsula	8,700	1,014,100	16,300	2,150,000	1,501,000	4,690,900
	North Peninsula	9,700	1,208,500	0	1,200	252,300	1,471,700
	Aleutians	0	55,200	4,400	75,800	135,200	270,400
	Total	18,400	2,277,800	20,700	2,227,600	1,888,500	6,433,000
1919	South Peninsula	9,600	619,100	56,100	80,200	921,400	1,686,400
	North Peninsula	19,600	389,200	0	12,000	143,500	564,300
	Aleutians	0	3,900	800	4,000	0	8,700
	Total	29,200	1,012,200	56,900	96,200	1,064,900	2,259,400
1920	South Peninsula	7,800	1,142,300	47,700	2,109,800	934,000	4,241,600
	North Peninsula	19,000	1,371,900	0	0	37,000	1,427,900
	Aleutians	0	10,100	2,800	0	0	12,900
	Total	26,800	2,524,300	50,500	2,109,800	971,000	5,682,400
1921	South Peninsula	700	830,700	1,500	47,300	84,600	964,800
	North Peninsula	12,500	1,746,500	0	0	32,800	1,791,800
	Aleutians	0	0	0	0	0	0
	Total	13,200	2,577,200	1,500	47,300	117,400	2,756,600
1922	South Peninsula	6,900	3,376,800	2,200	756,700	349,300	4,491,900
	North Peninsula	10,400	667,900	0	0	42,900	721,200
	Aleutians	0	14,000	0	0	0	14,000
	Total	17,300	4,058,700	2,200	756,700	392,200	5,227,100
1923	South Peninsula	4,100	1,827,200	75,300	143,600	538,900	2,589,100
	North Peninsula	9,100	731,700	100	0	25,800	766,700
	Aleutians	0	0	0	0	0	0
	Total	13,200	2,558,900	75,400	143,600	564,700	3,355,800
1924	South Peninsula	3,900	1,352,000	127,300	3,931,300	1,330,700	6,745,200
	North Peninsula	10,500	701,700	0	0	48,400	760,600
	Aleutians	0	24,900	0	673,800	100	698,800
	Total	14,400	2,078,600	127,300	4,605,100	1,379,200	8,204,600
1925	South Peninsula	10,700	820,500	127,100	382,100	1,116,800	2,457,200
	North Peninsula	10,600	400,200	0	0	53,900	464,700
	Aleutians	0	18,600	0	3,800	9,100	31,500
	Total	21,300	1,239,300	127,100	385,900	1,179,800	2,953,400
1926	South Peninsula	9,500	3,071,500	193,800	3,719,700	1,179,800	8,174,300
	North Peninsula	23,900	672,900	0	0	71,500	768,300
	Aleutians	0	1,300	0	521,700	7,800	530,800
	Total	33,400	3,745,700	13,800	4,241,400	1,259,100	9,473,400
1927	South Peninsula	9,600	714,700	125,300	1,455,500	1,299,700	3,604,800
	North Peninsula	16,500	230,600	100	0	87,000	334,200
	Aleutians	0	17,300	0	334,600	0	351,900
	Total	26,100	962,600	125,400	1,790,100	1,386,700	4,290,900
1928	S. Pen & Aleutian	7,700	971,500	96,600	900,900	2,416,300	4,393,000
	North Peninsula	4,600	855,600	0	0	83,500	943,700
	Total	12,300	1,827,100	96,600	900,900	2,499,800	5,336,700
1929	S. Pen & Aleutian	10,500	935,800	84,500	1,793,500	2,429,000	5,253,300
	North Peninsula	4,100	878,000	0	0	145,200	1,027,300
	Total	14,600	1,813,800	84,500	1,793,500	2,574,200	6,280,600
1930	S. Pen & Aleutian	10,900	935,200	161,100	6,094,800	1,278,100	8,480,100
	North Peninsula	3,800	167,700	0	0	93,400	265,200
	Total	14,700	1,102,900	161,100	6,094,800	1,371,800	8,745,300

continued

Table 1. Alaska Peninsula/Aleutian Islands Areas Salmon Catches (Numbers of Fish) (Page 3 of 7)

YEAR		CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1931	S. Pen & Aleutian	11,000	1,863,200	128,700	997,900	1,216,000	4,211,800
	North Peninsula	1,300	761,000	0	0	54,900	817,200
	Total	12,300	2,624,200	128,700	997,900	1,265,900	5,029,000
1932	S. Pen & Aleutian	17,400	2,977,300	112,300	3,604,800	817,300	7,529,100
	North Peninsula	3,200	977,100	0	0	56,300	1,036,600
	Total	20,600	3,954,400	112,300	3,604,800	873,600	8,565,700
1933	S. Pen & Aleutian	12,600	1,996,700	190,000	3,109,200	1,173,900	6,482,400
	North Peninsula	1,100	350,100	0	0	16,000	367,200
	Total	13,700	2,346,800	190,000	3,109,200	1,189,900	6,849,600
1934	S. Pen & Aleutian	17,600	1,372,400	247,100	6,538,500	1,940,300	10,115,900
	North Peninsula	1,600	1,091,300	0	400	13,000	1,106,300
	Total	19,200	2,464,700	247,100	6,538,900	1,953,300	11,222,200
1935	S. Pen & Aleutian	13,900	978,400	117,200	5,386,200	2,003,100	8,498,800
	North Peninsula	1,000	479,200	0	100	33,800	514,100
	Total	14,900	1,457,600	117,200	5,386,300	2,036,300	9,012,900
1936	S. Pen & Aleutian	14,400	3,662,600	284,600	9,471,000	2,310,900	15,743,500
	North Peninsula	1,000	610,700	0	2,800	19,000	633,500
	Total	15,400	4,273,300	284,600	9,473,800	2,329,900	16,377,000
1937	S. Pen & Aleutian	9,300	1,558,000	73,900	9,302,000	1,506,700	12,449,900
	North Peninsula	1,600	860,900	0	100	65,600	928,200
	Total	10,900	2,418,900	73,900	9,302,100	1,572,300	13,378,100
1938	S. Pen & Aleutian	6,400	772,100	220,700	7,169,100	1,476,600	9,644,900
	North Peninsula	5,900	1,009,600	0	0	34,700	1,050,200
	Total	12,300	1,781,700	220,700	7,169,100	1,511,300	10,695,100
1939	S. Pen & Aleutian	16,500	1,881,700	98,900	6,005,300	1,440,600	9,443,000
	North Peninsula	3,900	746,200	0	0	82,200	882,300
	Total	20,400	2,527,900	98,900	6,005,300	1,522,800	10,275,300
1940	S. Pen & Aleutian	9,100	1,040,300	184,200	7,182,800	2,326,300	10,472,700
	North Peninsula	700	678,900	0	0	65,600	745,200
	Total	9,800	1,719,200	184,200	7,182,800	2,391,900	11,487,900
1941	S. Pen & Aleutian	13,000	1,072,000	183,000	5,347,000	1,542,000	8,157,800
	North Peninsula	700	491,700	0	3,200	30,200	525,800
	Total	13,700	1,563,700	183,000	5,350,200	1,572,200	8,682,800
1942	S. Pen & Aleutian	4,800	810,100	123,000	6,762,600	1,321,100	9,021,600
	North Peninsula	0	0	0	0	0	0
	Total	4,800	810,100	123,000	6,762,600	1,321,100	9,021,600
1943	S. Pen & Aleutian	21,700	2,397,700	90,600	4,360,200	924,500	7,794,700
	North Peninsula	200	567,400	0	1,300	50,400	619,300
	Total	21,900	2,965,100	90,600	4,361,500	974,900	8,414,000
1944	S. Pen & Aleutian	9,900	538,600	238,700	2,653,800	985,600	4,426,600
	North Peninsula	100	414,700	0	2,600	157,900	575,300
	Total	10,000	953,300	238,700	2,656,400	1,143,500	5,001,900
1945	S. Pen & Aleutian	21,400	813,400	116,100	3,639,600	948,900	5,539,400
	North Peninsula	100	394,400	0	2,500	335,100	732,100
	Total	21,500	1,207,800	116,100	3,642,100	1,284,000	6,271,500
1946	S. Pen & Aleutian	6,100	752,300	151,400	1,964,000	1,219,900	4,093,700
	North Peninsula	2,500	697,700	300	0	36,000	736,500
	Total	8,600	1,450,000	151,700	1,964,000	1,255,900	4,830,200

continued

Table 1. Alaska Peninsula/Aleutian Islands Areas Salmon Catches (Numbers of Fish) (Page 4 of 7)

YEAR		CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1947	S. Pen & Aleutian	3,400	1,137,100	55,800	2,319,600	1,219,200	4,735,100
	North Peninsula	100	357,700	100	100	75,000	433,000
	Total	3,500	1,491,800	55,900	2,319,700	1,294,200	5,168,100
1948	S. Pen & Aleutian	1,200	285,900	39,200	1,683,700	1,139,600	3,149,600
	North Peninsula	1,200	477,600	17,200	0	161,700	658,700
	Total	3,400	763,500	56,400	1,683,700	1,301,300	3,808,300
1949	S. Pen & Aleutian	3,800	637,500	19,500	1,544,000	560,900	2,765,700
	North Peninsula	700	137,100	25,700	0	40,700	204,200
	Total	4,500	774,600	45,200	1,544,000	601,600	2,969,900
1950	S. Pen & Aleutian	4,000	1,745,300	70,700	1,613,700	562,500	3,996,200
	North Peninsula	1,100	127,800	37,800	0	217,600	284,300
	Total	5,100	1,873,100	108,500	1,613,700	780,100	4,380,500
1951	South Peninsula	1,500	264,200	55,700	2,844,800	683,100	3,849,300
	North Peninsula	1,200	358,900	32,900	20,400	203,000	616,400
	Aleutians	0	11,700	400	500	94,500	107,100
	Total	2,700	634,800	89,000	2,865,700	980,600	4,572,800
1952	South Peninsula	9,200	894,500	39,200	908,500	1,040,800	2,892,200
	North Peninsula	700	354,800	54,200	1,400	246,900	658,000
	Aleutians	200	42,800	0	31,800	25,700	100,500
	Total	10,100	1,292,100	93,400	941,700	1,313,400	3,650,700
1953	South Peninsula	7,200	1,039,200	47,900	2,743,900	1,464,600	5,302,800
	North Peninsula	800	537,300	26,200	18,300	224,400	807,000
	Aleutians	0	4,200	500	69,200	800	74,700
	Total	8,000	1,580,700	74,600	2,831,400	1,689,800	6,184,500
1954	South Peninsula	4,200	636,300	49,400	2,033,300	1,413,400	4,136,600
	North Peninsula	3,400	354,700	35,000	18,500	405,000	816,600
	Aleutians	0	6,300	800	566,500	200	573,800
	Total	7,600	997,300	85,200	2,618,300	1,818,600	5,527,000
1955	South Peninsula	5,400	550,100	44,800	2,529,200	688,200	3,817,700
	North Peninsula	4,100	586,600	6,200	900	129,600	727,400
	Aleutians	0	12,600	100	31,100	400	44,200
	Total	9,500	1,149,300	51,100	2,561,200	818,200	4,589,300
1956	South Peninsula	4,800	641,400	61,900	2,740,700	1,618,700	5,067,500
	North Peninsula	4,200	1,370,900	8,200	28,500	427,400	1,839,200
	Aleutians	0	400	0	33,900	0	34,300
	Total	9,000	2,012,700	70,100	2,803,100	2,046,100	6,941,000
1957	South Peninsula	5,800	341,900	49,900	913,100	1,281,400	2,592,100
	North Peninsula	1,000	327,900	18,300	3,300	274,900	625,400
	Aleutians	2,300	27,300	100	500	13,900	44,100
	Total	9,100	697,100	68,300	916,900	1,570,200	3,261,600
1958	South Peninsula	800	186,100	70,600	1,385,200	841,000	2,483,700
	North Peninsula	15,000	473,800	57,100	60,400	254,800	861,100
	Aleutians	0	300	0	613,200	3,700	617,200
	Total	15,800	660,200	127,700	2,058,800	1,099,500	3,962,000
1959	South Peninsula	900	217,500	8,500	915,600	711,700	1,854,200
	North Peninsula	28,700	634,900	59,100	9,600	404,700	1,137,000
	Aleutians	0	6,100	0	12,000	100	18,200
	Total	29,600	858,500	67,600	937,200	1,116,500	3,009,400

continued

Table 1. Alaska Peninsula/Aleutian Islands Areas Salmon Catches (Numbers of Fish) (Page 5 of 7)

YEAR		CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1960	South Peninsula	1,700	379,000	1,800	1,197,500	904,400	2,484,400
	North Peninsula	10,400	692,800	44,000	34,700	607,200	1,389,100
	Aleutians	0	7,600	0	444,900	300	452,800
	Total	12,100	1,079,400	45,800	1,677,100	1,511,900	4,326,300
1961	South Peninsula	900	456,800	10,400	1,727,800	748,600	2,944,500
	North Peninsula	6,100	387,700	24,600	3,000	153,300	574,700
	Aleutians	0	2,700	0	94,000	200	96,900
	Total	7,000	847,200	35,000	1,824,800	902,100	3,616,100
1962	South Peninsula	3,300	420,000	12,500	1,965,500	824,800	3,226,100
	North Peninsula	5,400	249,700	35,200	31,200	34,900	356,400
	Aleutians	0	5,500	100	2,001,700	1,200	2,008,500
	Total	8,700	675,200	47,800	3,998,400	860,900	5,591,000
1963	South Peninsula	1,900	204,400	16,500	2,367,700	461,300	3,051,800
	North Peninsula	3,600	225,200	40,500	6,900	49,900	326,100
	Aleutians	0	4,500	0	93,900	300	98,700
	Total	5,500	434,100	57,000	2,468,500	511,500	3,476,600
1964	South Peninsula	2,000	370,800	13,600	2,740,400	751,000	3,877,800
	North Peninsula	3,600	250,800	36,600	6,800	139,000	436,800
	Aleutians	0	200	0	194,100	2,300	196,600
	Total	5,600	621,700	50,200	2,941,300	892,300	4,511,200
1965	South Peninsula	2,100	915,700	34,200	2,884,100	556,400	4,392,500
	North Peninsula	6,100	199,500	34,500	2,100	69,700	311,900
	Aleutians	0	0	0	0	0	0
	Total	8,200	1,115,200	68,700	2,886,200	626,100	4,704,400
1966	South Peninsula	1,400	606,200	6,300	302,300	494,400	1,410,600
	North Peninsula	5,600	245,300	37,300	16,000	82,800	387,000
	Aleutians	0	1,000	0	63,500	700	65,200
	Total	7,000	852,500	43,600	381,800	577,900	1,862,800
1967	South Peninsula	1,600	294,100	2,900	77,800	245,200	621,600
	North Peninsula	5,500	224,700	46,800	700	41,300	319,000
	Aleutians	0	200	0	7,900	0	8,100
	Total	7,100	519,000	49,700	86,400	286,500	948,700
1968	South Peninsula	1,400	699,800	31,100	1,287,100	325,300	2,344,700
	North Peninsula	4,500	237,100	64,900	200	73,500	380,200
	Aleutians	0	2,000	100	902,800	800	905,700
	Total	5,900	938,900	96,100	2,190,100	399,600	3,630,600
1969	South Peninsula	1,900	912,800	10,900	1,219,400	389,200	2,534,200
	North Peninsula	4,800	321,300	49,100	100	28,100	403,400
	Aleutians	0	1,900	0	242,200	1,500	245,600
	Total	6,700	1,236,000	60,000	1,461,700	418,800	3,183,200
1970	South Peninsula	1,800	1,794,600	32,200	1,723,400	981,700	4,533,700
	North Peninsula	3,200	213,000	26,400	7,800	50,200	300,600
	Aleutians	0	200	100	672,500	3,300	676,100
	Total	5,000	2,007,800	58,700	2,403,700	1,035,200	5,510,400
1971	South Peninsula	2,200	715,500	16,800	1,450,100	1,366,600	3,551,200
	North Peninsula	2,200	354,200	8,200	300	64,200	429,100
	Aleutians	0	300	0	45,500	100	45,900
	Total	4,400	1,070,000	25,000	1,495,900	1,430,900	4,026,200
1972	South Peninsula	1,300	557,800	8,000	78,000	727,500	1,372,600
	North Peninsula	1,800	179,500	9,600	0	84,700	275,600
	Aleutians	0	100	0	2,800	0	2,900
	Total	3,100	737,400	17,600	80,800	812,200	1,651,100

continued

Table 1. Alaska Peninsula/Aleutian Islands Areas Salmon Catches (Numbers of Fish) (Page 6 of 7)

YEAR		CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1973	South Peninsula	400	330,200	6,600	58,000	293,000	688,200
	North Peninsula	4,400	171,800	26,900	300	155,700	359,100
	Aleutians	0	100	0	7,000	0	7,100
	Total	4,800	502,100	33,500	65,300	448,700	1,054,400
1974	South Peninsula	500	204,700	9,400	99,700	71,500	385,800
	North Peninsula	5,100	247,900	24,000	10,500	35,300	322,800
	Aleutians	0	0	0	0	0	0
	Total	5,600	452,600	33,400	110,200	106,800	708,600
1975	South Peninsula	100	268,400	0	61,700	132,900	463,100
	North Peninsula	2,100	233,500	28,200	300	8,700	272,800
	Aleutians	0	0	0	0	0	0
	Total	2,200	501,900	28,200	62,000	141,600	735,900
1976	South Peninsula	2,100	375,000	200	2,367,000	532,500	3,276,800
	North Peninsula	4,900	641,100	26,000	600	73,600	746,200
	Aleutians	0	0	0	0	0	0
	Total	7,000	1,016,100	26,200	2,367,600	606,100	4,023,000
1977	South Peninsula	500	311,700	2,100	1,448,600	243,200	2,006,100
	North Peninsula	5,500	471,100	34,100	900	129,100	640,700
	Aleutians	0	0	0	0	0	0
	Total	6,000	782,800	36,200	1,449,500	372,300	2,646,800
1978	South Peninsula	800	579,500	60,700	5,608,800	547,000	6,796,800
	North Peninsula	14,200	896,200	63,300	466,600	163,200	1,603,500
	Aleutians	0	1,800	0	38,100	0	39,900
	Total	15,000	1,477,500	124,000	6,113,500	710,200	8,440,200
1979	South Peninsula	2,100	1,149,700	356,500	6,570,500	483,000	8,561,800
	North Peninsula	17,100	1,979,500	112,800	5,000	65,700	2,180,100
	Aleutians	0	12,200	0	539,400	200	551,800
	Total	19,200	3,141,400	469,300	7,114,900	548,900	11,293,700
1980	South Peninsula	4,800	3,613,000	274,200	7,961,500	1,351,200	13,104,700
	North Peninsula	16,800	1,397,100	127,900	301,700	700,200	2,543,700
	Aleutians	0	9,200	0	2,597,500	4,900	2,611,600
	Total	21,600	5,019,300	402,100	10,760,700	2,056,300	18,260,000
1981	South Peninsula	10,200	2,255,200	162,200	5,035,900	1,770,300	9,233,800
	North Peninsula	18,300	1,844,900	155,400	11,200	706,800	2,736,600
	Aleutians	0	5,400	200	302,800	6,600	315,000
	Total	28,500	4,105,500	317,800	5,349,900	2,483,700	12,285,400
1982	South Peninsula	9,800	2,346,000	256,000	6,734,900	2,272,500	11,619,200
	North Peninsula	30,100	1,435,300	238,000	12,300	331,100	2,046,800
	Aleutians	0	2,700	0	1,447,800	6,100	1,456,600
	Total	39,900	3,784,000	494,000	8,195,000	2,609,700	15,122,600
1983	South Peninsula	26,900	2,556,600	127,700	2,827,600	1,707,100	7,245,900
	North Peninsula	29,500	2,093,400	75,100	3,400	348,700	2,550,100
	Aleutians	0	4,400	0	2,000	11,400	17,800
	Total	56,400	4,654,400	202,800	2,833,000	2,067,200	9,813,800
1984	South Peninsula	9,200	2,318,000	309,100	11,589,300	1,656,500	5,882,100
	North Peninsula	23,000	1,734,900	198,600	27,400	796,700	2,780,600
	Aleutians	0	67,200	0	2,309,700	33,900	2,410,800
	Total	32,200	4,120,100	507,700	13,926,400	2,487,100	21,073,500

continued

Table 1. Alaska Peninsula/Aleutian Islands Areas Salmon Catches (Numbers of Fish) (Page 7 of 7)

YEAR		CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1985	South Peninsula	7,900	2,214,600	172,500	4,433,700	1,393,100	8,221,800
	North Peninsula	23,500	2,600,500	167,800	3,100	671,100	3,466,000
	Aleutians	0	2,800	0	100	14,200	17,100
	Total	31,400	4,817,900	340,300	4,436,900	2,078,400	11,704,900
1986	South Peninsula	5,600	1,223,000	235,900	4,031,500	1,749,700	7,245,700
	North Peninsula	11,700	2,436,700	164,100	22,600	271,200	2,933,300
	Aleutians	0	7,700	100	42,600	38,800	89,200
	Total	17,300	3,694,400	400,100	4,096,700	2,059,700	10,268,200
1987	South Peninsula	9,200	1,449,800	224,700	1,208,600	1,376,300	4,268,600
	North Peninsula	14,200	1,209,400	171,800	3,500	368,700	1,767,600
	Aleutians	0	100	0	0	0	100
	Total	23,400	2,659,300	396,500	1,212,100	1,745,000	6,036,300
1988	South Peninsula	11,100	1,472,900	505,500	7,044,800	1,905,200	10,939,500
	North Peninsula	16,800	1,528,100	234,000	65,200	393,500	2,237,600
	Aleutians	0	4,300	0	183,100	500	187,900
	Total	27,900	3,005,300	739,500	7,293,100	2,299,200	13,365,000
1989	South Peninsula	7,000	2,660,700	443,800	7,292,700	994,200	11,398,400
	North Peninsula	10,900	1,718,700	227,600	4,100	157,200	2,118,500
	Aleutians	0	8,200	0	6,700	0	14,900
	Total	17,900	4,387,600	671,400	7,303,500	1,151,400	13,531,800
1990	South Peninsula	16,500	2,386,600	307,200	2,865,900	1,237,800	6,814,000
	North Peninsula	12,300	2,415,900	192,800	517,700	125,800	3,264,500
	Aleutians	0	12,400	100	282,800	1,000	296,300
	Total	28,800	4,814,900	500,100	3,666,400	1,364,600	10,374,800
1991	South Peninsula	8,000	2,322,400	317,000	10,615,800	1,587,400	14,850,600
	North Peninsula	9,400	2,392,100	217,400	4,200	191,300	2,814,400
	Aleutians	0	800	0	0	0	800
	Total	17,400	4,715,300	534,400	10,620,000	1,778,700	17,665,800

Table 2. 1991 Alaska Peninsula-Aleutian Islands Salmon Harvest in Numbers of Fish by Statistical Area, Section, and District. (Page 1 of 4)

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
<b>SOUTH PENINSULA</b>						
<b>Southeastern District</b>						
281-15 Kupreanof Point	44	17,173	19,821	242,464	41,511	321,013
281-25 Island & Fox Bays	252	119,298	7,511	171,686	39,159	337,906
<b>East Stepovak Section Total</b>	<b>296</b>	<b>136,471</b>	<b>27,332</b>	<b>414,150</b>	<b>80,670</b>	<b>658,919</b>
<b>281-30 Stepovak Flats Section</b>	<b>54</b>	<b>9,400</b>	<b>173</b>	<b>422</b>	<b>2,693</b>	<b>12,742</b>
281-40 Grub Gulch/Clark Bay	63	25,691	203	6,752	5,904	38,613
281-50 Orzinski Bay	46	50,496	1,908	44,944	10,511	107,905
281-60 Elephant Pt. to Dorenoi Bay	175	34,333	533	68,508	11,235	114,784
<b>Northwest Stepovak Section Total</b>	<b>284</b>	<b>110,520</b>	<b>2,644</b>	<b>120,204</b>	<b>27,650</b>	<b>261,302</b>
<b>281-70 Southwest Stepovak Section</b>	<b>148</b>	<b>64,098</b>	<b>9,300</b>	<b>469,884</b>	<b>31,427</b>	<b>574,857</b>
<b>281-80 Balboa Bay Section</b>	<b>170</b>	<b>53,722</b>	<b>6,046</b>	<b>592,292</b>	<b>42,232</b>	<b>694,462</b>
<b>281-90 Beaver Bay Section</b>	<b>111</b>	<b>25,102</b>	<b>4,378</b>	<b>522,264</b>	<b>10,478</b>	<b>562,222</b>
282-10 Popof Strait/Squaw Harbor	149	25,047	6,479	248,707	17,265	297,647
282-11 Unga Cape/East Popof	2,337	280,964	92,059	1,275,633	227,500	1,878,558
282-20 Acheredin Bay	155	83,687	8,730	281,550	23,953	398,075
282-25 West Unga	38	40,040	2,863	106,650	9,498	159,089
282-30 Bay Point	5	6,037	64	484	360	6,950
282-35 Zachary Bay	8	4,406	214	181,957	10,656	197,241
282-40 East Hd./West Hd.	21	3,013	782	1,993	1,011	6,820
282-42 Korovin Island	432	76,423	32,734	75,135	27,033	211,757
282-45 Cape Wedge	13	3,028	31	1,320	1,728	6,120
282-65 S.E. Nagai/Near Island	1	1,013	22	217	89	1,342
282-70 John I./Mountain Pt.	43	26,156	2,167	66,501	6,041	100,908
282-75 Cape Horn/Porpoise Rocks	3	5,128	483	35,219	1,561	42,394
282-80 East Nagai Strait	63	5,291	6	2,787	2,182	10,329
<b>Shumagin Islands Section Total</b>	<b>3,268</b>	<b>560,233</b>	<b>146,634</b>	<b>2,278,218</b>	<b>328,877</b>	<b>3,317,230</b>
<b>SOUTHEASTERN DISTRICT TOTAL</b>	<b>4,331</b>	<b>959,546</b>	<b>196,507</b>	<b>4,397,434</b>	<b>524,027</b>	<b>6,081,845</b>
<b>South Central District</b>						
283-15 Mino Creek	10	1,817	273	54,561	883	57,544
283-17 Coal Bay	24	6,229	1,699	752,453	6,833	767,238
<b>Mino Cr.-Little Coal B. Sect. Total</b>	<b>34</b>	<b>8,046</b>	<b>1,972</b>	<b>807,014</b>	<b>7,716</b>	<b>824,782</b>
283-21 Cape Tolstoi	28	17,298	1,560	708,368	7,183	734,437
283-23 East Pavlof Bay	21	5,919	1,025	1,420,272	48,714	1,475,951
283-25 Chinaman Lagoon	0	17	196	2,795	13,537	16,545
283-26 Long Beach/Ukolnoi Is.	105	12,819	4,452	161,541	40,596	219,513
<b>Pavlof Bay Section Total</b>	<b>154</b>	<b>36,053</b>	<b>7,233</b>	<b>2,292,976</b>	<b>110,030</b>	<b>2,446,446</b>

continued



Table 2. 1991 Alaska Peninsula-Aleutian Islands Salmon Harvest in Numbers of Fish by Statistical Area, Section, and District. (Page 2 of 4)

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
<b>SOUTH PENINSULA (continued)</b>						
<b>South Central District (Continued)</b>						
283-24 Canoe Bay Section	14	178	54	170,656	38,806	209,708
<b>SOUTH CENTRAL DISTRICT TOTAL</b>	<b>202</b>	<b>44,277</b>	<b>9,259</b>	<b>3,270,646</b>	<b>156,552</b>	<b>3,480,936</b>
<b>Southwestern District</b>						
284-36 Volcano Bay	1	2,977	695	181,292	79,263	264,228
284-37 Northside Dolgoi Island	101	43,000	19,279	210,694	12,711	285,785
284-38 South Dolgoi/Moss Cape	51	10,533	5,284	243,905	4,375	264,148
<b>Volcano Bay Section Total</b>	<b>153</b>	<b>56,510</b>	<b>25,258</b>	<b>635,891</b>	<b>96,349</b>	<b>814,161</b>
284-42 Belkofski Bay	42	6,816	1,186	788,578	56,962	853,584
284-45 King Cove	0	1,339	104	69,825	2,563	73,831
<b>Belkofski Bay Section Total</b>	<b>42</b>	<b>8,155</b>	<b>1,290</b>	<b>858,403</b>	<b>59,525</b>	<b>927,415</b>
284-55 Deer Island Section	20	3,026	2,271	853,569	3,708	862,594
284-62 Outer Cold Bay	1	1,065	90	507	1,376	3,039
284-65 Lenard Harbor	0	11	10	15,710	3,295	19,026
284-67 Inner Cold Bay	0	1	0	3,800	9,450	13,251
<b>Cold Bay Section Total</b>	<b>1</b>	<b>1,077</b>	<b>100</b>	<b>20,017</b>	<b>14,121</b>	<b>35,326</b>
284-75 Thin Point Section	0	4,865	14,230	39,982	2,136	61,213
284-80 Morzhovoi Bay Section	12	3,098	1,120	1,679	24,593	30,502
284-90 Ikatan Bay Section	776	281,356	56,146	165,839	122,310	626,427
<b>SOUTHWESTERN DISTRICT TOTAL</b>	<b>1,004</b>	<b>358,087</b>	<b>100,415</b>	<b>2,575,380</b>	<b>322,742</b>	<b>3,357,628</b>
<b>Unimak District</b>						
285-10 Sanak Island Section	70	9,859	760	1,769	21,135	33,593
285-20 Bird Island	224	90,551	1,270	13,907	44,608	150,560
285-30 Cape Lazaref	286	123,277	8,790	64,273	52,453	249,079
<b>Otter Cove Section Total</b>	<b>510</b>	<b>213,828</b>	<b>10,060</b>	<b>78,180</b>	<b>97,061</b>	<b>399,639</b>
285-40 Cape Lutke Section	1,858	736,839	3	292,352	465,851	1,496,903
<b>UNIMAK DISTRICT TOTAL</b>	<b>2,438</b>	<b>960,526</b>	<b>10,823</b>	<b>372,301</b>	<b>584,047</b>	<b>1,930,135</b>
<b>SOUTH PENINSULA TOTAL</b>	<b>7,975</b>	<b>2,322,436</b>	<b>317,004</b>	<b>10,615,761</b>	<b>1,587,368</b>	<b>14,850,544</b>

-continued-

Table 2. 1991 Alaska Peninsula-Aleutian Islands Salmon Harvest in Numbers of Fish by Statistical Area, Section, and District. (page 3 of 4)

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
<b>ALEUTIAN ISLANDS AREA</b>						
<b>Unalaska District</b>						
302-22 Kashega Bay Section	0	796	0	0	0	796
Unalaska District Total	0	796	0	0	0	796
<b>ALEUTIAN ISLANDS AREA TOTAL</b>	<b>0</b>	<b>796</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>796</b>
<b>NORTH PENINSULA</b>						
<b>Northwestern District</b>						
311-32 Urilia Bay Section	38	146,594	0	6	2,130	148,768
311-52 Swanson Lagoon Section	5	9,549	18,869	2	2,949	31,374
311-60 Bechevin Bay Section	0	584	80	3,394	6,140	10,198
312-10 Outside Izembek	0	203	8	5	461	677
312-20 Izembek Lagoon	0	17,204	0	2	2,976	20,182
312-40 Moffet Lagoon	0	7,093	0	0	48,084	55,177
Izembek-Moffet Bay Section Total	0	24,500	8	7	51,521	76,036
<b>NORTHWESTERN DISTRICT TOTAL</b>	<b>43</b>	<b>181,227</b>	<b>18,957</b>	<b>3,409</b>	<b>62,740</b>	<b>266,376</b>
<b>Northern District</b>						
313-10 Black Hills Section	635	16,382	26	35	3,353	20,431
313-30 Nelson Lagoon Section	3,450	274,635	66,520	32	7,374	352,011
314-20 Herendeen Bay	0	52	0	0	12,666	12,718
314-12 Port Moller Bight	202	4,535	181	108	10,888	15,914
Herendeen-Moller Bay Section Total	202	4,587	181	108	23,554	28,632
315-11 Bear and Sandy Rivers	1,494	934,981	34,417	521	68,519	1,039,932
315-20 Muddy River	150	109,684	1,929	14	4,272	116,049
Bear River Section Total	1,644	1,044,665	36,346	535	72,791	1,155,981
316-10 Three Hills Section	125	253,880	2,467	30	8,822	265,324

continued

Table 2. 1991 Alaska Peninsula-Aleutian Islands Salmon Harvest in Numbers of Fish by Statistical Area, Section, and District. (Page 4 of 4)

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
<b>Northern District (Continued)</b>						
316-20 Outside Ilnik	105	464,900	872	87	8,814	474,778
316-22 Ilnik Lagoon	1	23,928	3,484	2	20	27,435
316-25 Stroganof Point	24	122,147	629	11	3,151	125,962
<b>Ilnik Section Total</b>	<b>130</b>	<b>610,975</b>	<b>4,985</b>	<b>100</b>	<b>11,985</b>	<b>628,175</b>
<b>317-20 Inner Port Heiden Sect.</b>	<b>3,139</b>	<b>5,439</b>	<b>37,249</b>	<b>0</b>	<b>445</b>	<b>46,272</b>
<b>318-20 Cinder River Section</b>	<b>2</b>	<b>296</b>	<b>50,643</b>	<b>0</b>	<b>219</b>	<b>51,160</b>
<b>Northern District Total</b>	<b>9,327</b>	<b>2,210,859</b>	<b>198,417</b>	<b>840</b>	<b>128,543</b>	<b>2,547,986</b>
<b>NORTH PENINSULA TOTAL</b>	<b>9,370</b>	<b>2,392,086</b>	<b>217,374</b>	<b>4,249</b>	<b>191,283</b>	<b>2,814,362</b>
<b>TOTAL ALASKA PENINSULA - ALEUTIAN ISLANDS AREAS</b>	<b>17,345</b>	<b>4,715,318</b>	<b>534,378</b>	<b>10,620,010</b>	<b>1,778,651</b>	<b>17,665,702</b>

Table 3. Estimated Value of 1991 Commercial Fishery.

(Page 1 of 2)

Salmon Ex-vessel						
South Peninsula	Chinook	Sockeye	Coho	Pink	Chum	Total
Poundage	121,631	13,257,309	1,924,517	33,313,628	10,109,360	58,726,445
Average Weight	16.2	5.8	6.1	3.1	6.4	
Value \$	87,000	11,269,000	872,000	3,931,000	2,325,000	18,484,000
Aleutian Islands						
Poundage	0	4,010	0	0	0	4,010
Average Weight	0	5	0	0	0	
Value \$	0	2,800	0	0	0	2,800
Northwestern District						
Poundage	784	1,031,423	183,727	11,750	436,279	1,663,963
Average Weight	18.2	5.7	9.7	3.4	7.0	
Value \$	600	872,000	109,000	1,400	96,000	1,079,000
Northern District						
Poundage	155,147	11,890,774	1,567,172	2,876	825,792	14,441,761
Average Weight	16.6	5.2	7.9	3.4	6.4	
Value \$	127,000	10,500,000	976,000	300	190,000	11,793,300
North Peninsula Total						
Poundage	155,931	12,922,197	1,750,899	14,626	1,262,071	16,105,724
Average Weight	16.6	5.4	8.1	3.4	6.6	
Value \$	127,600	11,372,000	1,085,000	1,700	286,000	12,872,300
Total Alaska Peninsula - Aleutians Island Areas						
Poundage	277,562	26,183,516	3,675,416	33,328,254	11,371,431	74,836,179
Average Weight	16.4	5.6	6.9	3.1	6.4	
Value \$	214,600	22,643,800	1,957,000	3,932,700	2,611,000	31,359,100

Table 3. Estimated Value of 1991 Commercial Fishery. (page 2 of 2)

Salmon Ex-vessel						
South Unimak And Shumagin Island June Fishery (These figures are included above)						
	Chinook	Sockeye	Coho	Pink	Chum	Total
Poundage	79,296	8,415,435	77	1,662,474	4,733,337	14,890,619
Average Weight	17.7	5.4	6.4	2.7	6.1	
Value \$	65,000	7,400,000	40	1,800,000	1,200,000	10,465,040

Salmon First Wholesale						
	Chinook	Sockeye	Coho	Pink	Chum	Total
Fish	500,000	73,000,000	7,000,000	38,000,000	16,000,000	134,500,000
Roe	100,000	8,000,000	1,200,000	8,000,000	4,700,000	22,000,000
Total	600,000	81,000,000	8,200,000	46,000,000	20,700,000	156,500,000

Herring		
	Ex - Vessel \$	Wholesale \$
South Peninsula Food / Bait	0	0
South Peninsula Sac - Roe	60,300	525,000
North Peninsula Sac - Roe	394,300	2,900,000
Eastern Aleutians Food / Bait	398,000	1,200,000
Total	852,600	4,625,000

Values are obtained by selecting a price that approximates an average, and multiplying the price by the number of pounds. Because prices fluctuate throughout the year and between buyers and sections, the values are an estimate.

Table 4. Alaska Peninsula-Aleutian Islands Management Areas salmon catch by year, gear, species, and estimated value, 1979-91. (Pg 1 of 4)

Year	King		Sockeye		Coho		Pink		Chum		Total	
	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Numbers	Est.\$Value by% of catch
1979												
Seine	1,634	41,024	909,000	5,806,222	352,759	2,403,576	6,989,540	9,544,217	440,159	1,706,042	8,693,092	19,501,081
Drift GN	9,592	240,779	1,840,103	11,753,626	64,826	441,669	29,301	39,800	67,901	263,172	2,011,723	12,739,046
Set GN	8,022	201,398	392,197	2,505,152	52,117	355,256	90,460	123,283	40,823	158,286	583,619	3,343,374
Total	19,248	483,200	3,141,300	20,065,000	469,702	3,200,500	7,109,301	9,707,300	548,883	2,127,500	11,288,434	35,583,500
1980												
Seine	4,246	58,969	2,899,956	9,244,048	250,343	933,974	10,650,959	13,857,200	1,555,424	4,534,200	15,360,928	28,628,391
Drift GN	10,988	152,604	1,727,187	5,505,669	78,057	291,213	7,339	9,800	369,446	1,077,000	2,193,017	7,036,287
Set GN	6,367	88,426	392,227	1,250,283	73,661	274,813	102,305	133,000	133,313	388,800	707,873	2,135,322
Total	21,601	300,000	5,019,370	16,000,000	402,061	1,500,000	10,760,603	14,000,000	2,058,183	6,000,000	18,261,818	37,800,000
1981												
Seine	8,347	149,904	1,296,886	7,555,092	156,590	818,867	5,217,398	7,780,053	1,905,053	6,186,088	8,584,274	22,490,005
Drift GN	12,692	227,880	2,217,648	12,919,049	77,022	402,703	15,646	23,122	427,385	1,387,760	2,750,393	14,960,513
Set GN	9,034	162,216	576,744	3,359,859	84,219	440,430	113,987	169,825	149,408	485,152	933,392	4,617,482
Total	30,073	540,000	4,091,278	23,834,000	317,831	1,662,000	5,347,031	7,973,000	2,481,846	8,059,000	12,268,059	42,068,000
1982												
Seine	6,775	159,719	1,465,926	7,342,780	219,591	1,193,753	8,008,412	6,273,624	1,772,536	5,222,369	11,473,240	20,192,244
Drift GN	20,474	482,670	1,980,518	9,920,524	145,377	790,307	67,811	53,286	708,014	2,086,026	2,922,194	13,332,811
Set GN	12,709	299,612	337,489	1,690,697	129,122	701,940	118,821	93,090	129,226	380,606	727,367	3,165,944
Total	39,958	942,000	3,783,933	18,954,000	494,090	2,686,000	8,195,044	6,420,000	2,609,776	7,689,000	15,122,801	36,691,000

Note: Sums of columns may not add up exactly due to rounding errors.

Table 4. Alaska Peninsula - Aleutian Islands Management Areas salmon catch by year, gear, species, and estimated value, 1979 - 1991. (page 2 of 4).

Year	Kings		Sockeyes		Cohos		Pinks		Chums		Total	
	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Numbers	Est.\$Value by% of catch
1983												
Seine	23,463	290,228	1,630,925	7,710,942	111,230	413,021	2,746,223	2,798,538	1,620,739	3,682,741	6,132,580	14,895,470
Drift GN	21,393	264,657	2,503,431	11,836,113	28,750	106,775	8,691	8,857	351,652	799,006	2,913,917	13,015,407
Set GN	11,164	138,115	515,856	2,438,945	62,815	233,204	78,117	79,605	91,128	207,254	759,080	3,097,123
Total	56,020	693,000	4,650,212	21,986,000	202,795	753,000	2,833,031	2,887,000	2,063,519	4,689,000	9,805,577	31,008,000
1984												
Seine	7,592	162,878	1,463,407	6,927,466	259,465	1,283,032	13,561,868	12,265,369	1,708,621	3,384,960	17,000,953	24,023,704
Drift GN	17,100	366,861	1,879,213	8,895,318	145,839	721,161	97,797	88,448	615,043	1,218,684	2,754,992	11,290,472
Set GN	7,498	160,861	777,427	3,680,216	106,151	524,907	266,677	241,183	159,711	316,356	1,317,464	4,923,524
Total	32,190	690,600	4,120,047	19,503,000	511,455	2,529,100	13,926,342	12,595,000	2,483,375	4,920,000	21,073,409	40,237,700
1985												
Seine	5,403	111,106	1,493,743	8,835,393	163,998	966,202	4,203,337	3,590,683	1,566,519	3,367,800	7,433,000	16,871,184
Drift GN	15,262	313,931	2,632,206	15,569,329	89,676	528,289	23,775	20,455	374,261	804,537	3,135,180	17,236,541
Set GN	9,545	196,362	617,298	3,651,278	94,958	559,510	207,048	176,901	88,752	190,663	1,017,601	4,774,714
Total	30,210	621,400	4,743,247	28,056,000	348,632	2,054,000	4,434,160	3,788,040	2,029,532	4,363,000	11,585,781	38,882,440
1986												
Seine	4,886	63,512	857,871	7,218,401	223,520	1,109,746	3,944,312	2,665,608	1,682,080	4,151,941	6,712,669	15,209,209
Drift GN	7,870	102,301	2,328,600	19,594,136	93,096	462,212	42,523	28,793	279,020	688,716	2,751,109	20,876,158
Set GN	4,584	59,587	508,055	4,274,463	83,439	414,342	109,903	74,198	98,586	243,344	804,567	5,065,933
Total	17,340	225,400	3,694,526	31,087,000	400,055	1,986,300	4,096,738	2,768,600	2,059,686	5,084,000	10,268,345	41,151,300

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Note: Sums of columns may not add up exactly due to rounding errors.

Table 4. Alaska Peninsula - Aleutian Islands Management Areas salmon catch by year, gear, species, and estimated value, 1979 - 1991. (page 3 of 4).

Year	Kings		Sockeyes		Cohos		Pinks		Chums		Total	
	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Numbers	Est.\$Value by% of catch
1987												
Seine	7,826	174,544	705,571	7,305,460	18,540	1,383,112	1,152,291	1,691,295	1,212,279	3,320,666	3,263,507	13,875,078
Drift GN	11,104	247,653	1,409,294	14,594,398	121,885	908,674	6,204	9,073	432,697	1,185,440	1,981,184	16,945,239
Set GN	4,430	98,803	544,398	5,636,742	89,099	664,213	53,547	78,632	99,987	273,894	791,461	6,752,284
Total	23,360	521,000	2,659,263	27,536,600	396,524	2,956,000	1,212,042	1,779,000	1,744,963	4,780,000	6,036,152	37,572,600
1988												
Seine	9,640	232,723	840,511	11,952,232	405,243	3,534,600	6,818,574	19,005,582	1,660,529	10,403,088	9,734,497	45,128,225
Drift GN	12,324	297,533	1,652,827	23,503,525	199,807	1,742,790	181,516	506,192	512,998	3,213,893	2,559,472	29,263,934
Set GN	5,913	142,743	511,965	7,280,243	134,456	1,172,610	293,078	817,226	125,623	787,019	1,071,035	10,199,841
Total	27,877	673,000	3,005,303	42,736,000	739,506	6,450,000	7,293,168	20,329,000	2,299,150	14,404,000	13,365,004	84,592,000
1989												
Seine	5,775	117,486	1,666,704	14,925,204	307,919	1,831,648	6,857,700	8,958,999	720,709	1,947,290	9,558,807	27,780,628
Drift GN	7,822	159,100	2,038,341	18,253,184	217,192	1,292,059	87,114	113,538	329,560	890,441	2,680,029	20,708,323
Set GN	4,396	89,414	682,598	6,112,612	146,283	870,293	358,647	468,463	101,139	273,268	1,293,063	7,814,050
Total	17,993	366,000	4,387,643	39,291,000	671,394	3,994,000	7,303,461	9,541,000	1,151,408	3,111,000	13,531,899	56,303,000
1990												
Seine	11,674	239,867	1,470,145	12,937,460	227,688	1,354,192	3,533,661	3,369,540	996,546	2,368,008	6,239,714	20,269,067
Drift GN	13,203	271,284	2,583,655	22,736,487	158,088	940,241	54,787	52,242	282,319	670,851	3,092,052	24,671,105
Set GN	4,450	91,435	759,734	6,685,754	112,786	670,804	73,382	69,974	82,965	197,143	1,033,317	7,715,109
Total	29,327	602,586	4,813,534	42,359,701	498,562	2,965,237	3,661,830	3,491,756	1,361,830	3,236,001	10,342,001	52,655,281

Note: Sums of columns may not add up exactly due to rounding errors.



Table 4. Alaska Peninsula - Aleutian Islands Management Areas salmon catch by year, gear, species, and estimated value, 1979 - 1991. (page 4 of 4).

Year	Kings		Sockeyes		Cohos		Pinks		Chums		Total	
	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Number	Est.\$Value by% of catch	Numbers	Est. Value
1991 Area M												
Seine	5,208	66,000	1,289,702	6,100,000	217,550	620,000	10,233,380	3,776,000	1,212,041	1,750,000	12,957,881	12,312,000
Drift GN	4,904	62,000	2,568,290	12,000,000	117,294	649,000	28,627	13,000	383,144	600,690	3,102,259	13,324,690
Set GN	3,942	46,600	838,881	4,541,600	110,278	245,000	338,838	143,700	168,321	259,910	1,460,260	5,236,810
Total	14,054	174,600	4,696,873	22,641,600	445,122	1,514,000	10,600,845	3,932,700	1,763,506	2,610,600	17,520,400	30,873,500
1991 Area T												
Drift GN	2,826	40,000	498	2,030	76,525	395,000	0	0	225	310	80,074	437,340
Set GN	0	0	42	170	8,950	48,000	0	0	6	90	8,998	48,260
Total	2,826	40,000	540	2,200	85,475	443,000	0	0	231	400	89,072	485,600
Grand Total												
Seine	5,208	66,000	1,289,702	6,100,000	217,550	620,000	10,233,380	3,776,000	1,212,041	1,750,000	12,957,881	12,312,000
Drift GN	7,730	102,000	2,568,788	12,002,030	193,819	1,044,000	28,627	13,000	383,369	601,000	3,182,333	13,762,030
Set GN	3,942	46,600	838,923	4,541,770	119,228	293,000	338,838	143,700	168,327	260,000	1,469,258	5,285,070
Total	16,880	214,600	4,697,413	22,643,800	530,597	1,957,000	10,600,845	3,932,700	1,763,737	2,611,000	17,609,472	31,359,100

Table 5. 1991 Salmon Catches (Numbers of Fish) by Species, Permanent Salmon Week\*, and Area (All Gear) (Page 1 of 3)

## SOUTHEASTERN DISTRICT MAINLAND 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
G June 12-13	56	34,946	0	0	188	35,190
H June 14-20	137	79,383	0	7	1,202	80,729
I June 21-27	37	70,584	1	29	1,784	72,435
K July 5-11	156	66,473	387	708	1,862	69,586
L July 12-18	209	23,765	729	19,095	5,775	49,573
M July 19-25	19	14,576	269	4,949	1,298	21,111
N July 26-Aug. 1	326	49,023	25,661	893,172	68,356	1,036,538
O Aug. 2-8	116	22,599	8,110	684,172	62,131	777,128
P Aug. 9-15	7	20,259	8,883	441,606	41,747	512,502
Q Aug. 16-18	0	2,694	1,159	75,478	8,712	88,043
S Sept. 1-5	0	4,560	1,413	0	1,072	7,045
T Sept. 6-12	0	5,269	2,179	0	830	8,278
U Sept. 13-19	0	2,444	853	0	188	3,485
V Sept. 20-26	0	53	8	0	5	66
W Sept. 27-Oct. 3	0	27	221	0	0	248
<b>Total</b>	<b>1,063</b>	<b>396,655</b>	<b>50,102</b>	<b>2,119,216</b>	<b>195,150</b>	<b>2,761,957</b>

## SHUMAGIN ISLANDS 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
H June 14-20	1,246	224,703	0	68,920	57,804	352,673
I June 21-22	161	108,569	7	49,295	44,798	202,830
K July 6-11	110	47,432	763	1,282	5,542	55,129
L July 12-18	76	15,979	4,505	7,098	5,300	32,958
M July 21-25	696	38,375	67,555	319,826	36,113	462,565
N July 26-Aug. 1	321	31,674	21,457	496,309	37,769	587,530
O Aug. 2-8	166	37,060	16,586	750,693	54,885	859,390
P Aug. 9-15	23	25,105	17,828	393,813	48,489	485,258
Q Aug. 16-18	2	9,078	11,075	171,817	22,991	214,963
S Sept. 1-5	1	1,162	952	0	301	2,416
T Sept. 6-12	0	3,566	1,420	0	214	5,200
U Sept. 13-19	0	832	300	0	28	1,160
V Sept. 20-26	0	1,655	389	0	32	2,076
W Sept. 27-Oct. 3	1	173	16	0	3	193
<b>Total</b>	<b>2,803</b>	<b>545,363</b>	<b>142,853</b>	<b>2,259,053</b>	<b>314,269</b>	<b>3,264,341</b>

## SOUTH CENTRAL DISTRICT 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
K July 6-11	59	6,120	896	7,272	2,234	16,581
L July 12-18	50	10,354	1,109	27,518	2,996	42,027
M July 21-25	60	18,180	3,837	216,806	23,349	262,232
N July 26-Aug. 1	17	4,003	1,541	1,092,404	24,178	1,122,143
O Aug. 2-8	10	3,110	1,172	1,165,268	39,300	1,208,860
P Aug. 9-15	6	2,503	505	685,030	57,776	745,820
Q Aug. 16-18	0	7	199	76,348	6,719	83,273
<b>Total</b>	<b>202</b>	<b>44,277</b>	<b>9,259</b>	<b>3,270,646</b>	<b>156,552</b>	<b>3,480,936</b>

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Table 5. 1991 Salmon Catches (Numbers of Fish) by Species, Permanent Salmon Week\*, and Area (All Gear) (Page 2 of 6)

## SOUTHWESTERN AND UNIMAK DISTRICTS 1991

Week**	Chinook	Sockeye	Coho	Pink	Chum	Total
H June 14-20	2,278	618,344	2	208,523	294,815	1,123,962
I June 21-27	788	597,314	3	292,399	373,973	1,264,477
K July 6-11	67	21,570	2,929	10,970	3,167	38,703
L July 12-18	33	15,715	7,993	12,571	2,534	38,846
M July 21-25	177	24,881	41,445	79,099	17,505	163,107
N July 26-Aug. 1	64	21,323	34,814	425,190	20,554	501,945
O Aug. 2-8	29	8,602	6,792	1,041,101	25,821	1,082,345
P Aug. 9-15	5	6,531	2,537	778,463	72,251	859,787
Q Aug. 16-18	1	3,641	2,137	99,365	82,353	187,497
T Sept. 6-12	0	315	12,586	0	13,510	26,411
Total	3,442	1,318,236	111,238	2,947,681	906,483	5,287,060

## SOUTH UNIMAK FISHERY (KENMORE HEAD TO SCOTCH CAP INCLUDED IN SOUTHWESTERN AND UNIMAK DISTRICTS) 1991

Week**	Chinook	Sockeye	Coho	Pink	Chum	Total
H June 14-20	2,278	616,979	2	208,523	294,815	1,122,597
I June 21-25	786	591,688	2	292,074	373,927	1,258,477
K July 6-11	37	7,220	1,972	5,150	2,143	16,522
L July 12-18	14	1,679	5,627	44	1,146	8,510
M July 21-25	68	8,342	24,655	8,321	12,704	54,090
N July 26-Aug. 1	19	11,357	27,814	14,379	11,452	65,021
O Aug. 2-8	11	2,882	4,832	7,401	5,649	20,775
P Aug. 9-15	1	1,124	1,419	2,135	3,225	7,904
Q Aug. 16-18	0	229	571	113	925	1,838
T Sept. 6-12	0	5	75	0	65	145
Total	3,214	1,241,505	66,969	538,140	706,051	2,555,879

## \*\*\*ENTIRE SOUTH PENINSULA 1991

Week**	Chinook	Sockeye	Coho	Pink	Chum	Total
G June 12-13	0	35,000	0	0	0	35,000
H June 14-20	4,000	922,000	0	277,000	354,000	1,557,000
I June 21-27	1,000	776,000	0	342,000	421,000	1,540,000
K July 6-11	0	142,000	5,000	20,000	13,000	180,000
L July 12-18	0	66,000	14,000	66,000	17,000	163,000
M July 19-25	1,000	96,000	113,000	621,000	78,000	909,000
N July 26-Aug. 1	1,000	106,000	83,000	2,907,000	151,000	3,248,000
O Aug. 2-8	0	71,000	33,000	3,641,000	182,000	3,927,000
P Aug. 9-15	0	54,000	30,000	2,299,000	220,000	2,603,000
Q Aug. 16-18	0	15,000	15,000	423,000	121,000	574,000
S Sept. 1-5	0	6,000	2,000	0	1,000	9,000
T Sept. 6-12	0	9,000	16,000	0	15,000	40,000
U Sept. 13-19	0	3,000	1,000	0	0	4,000
V Sept. 20-26	0	2,000	0	0	0	2,000
Total	7,000	2,303,000	312,000	10,596,000	1,573,000	14,791,000

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Table 5. 1991 Salmon Catches (Numbers of Fish) by Species, Permanent Salmon Week\*, and Area (All Gear) (Page 3 of 6)

## ALEUTIAN ISLANDS (ALL CATCHES FROM UNALASKA ISLAND) 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
L July 12-18	<u>0</u>	<u>796</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>796</u>
<b>Total</b>	<b>0</b>	<b>796</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>796</b>

## URILIA BAY SECTION 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
F June 1-6	1	717	0	0	0	718
G June 7-13	25	3,917	0	0	22	3,964
H June 14-20	1	23,055	0	0	0	23,056
I June 21-27	3	37,770	0	0	90	37,863
J June 28-July 4	1	25,065			735	25,801
K July 5-11	5	50,780	0	5	979	51,769
L July 12-18	<u>2</u>	<u>5,290</u>	<u>0</u>	<u>1</u>	<u>304</u>	<u>5,597</u>
<b>Total</b>	<b>38</b>	<b>146,594</b>	<b>0</b>	<b>6</b>	<b>2,130</b>	<b>148,768</b>

## SWANSON LAGOON SECTION 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
I June 21-27	1	598	0	0	200	799
J June 28-July 4	0	1,240	0	0	185	1,425
K July 5-11	0	200	0	0	650	850
L July 12-18	0	256	14	2	79	351
M July 19-25	4	7,255	5	0	1,835	9,099
T Sept. 6-12	<u>0</u>	<u>0</u>	<u>18,850</u>	<u>0</u>	<u>0</u>	<u>18,850</u>
<b>Total</b>	<b>5</b>	<b>9,549</b>	<b>18,869</b>	<b>2</b>	<b>2,949</b>	<b>31,374</b>

## BECHEVIN BAY SECTION 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
J July 1-4	0	410	25	20	170	625
K July 5-11	0	0	0	74	1,000	1,074
L July 12-18	0	0	0	25	390	415
M July 19-25	0	81	0	275	3,845	4,201
Q Aug. 16-18	<u>0</u>	<u>93</u>	<u>55</u>	<u>3,000</u>	<u>735</u>	<u>3,883</u>
<b>Total</b>	<b>0</b>	<b>584</b>	<b>80</b>	<b>3,394</b>	<b>6,140</b>	<b>10,198</b>

## IZEMBEK-MOFFET BAY SECTION 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
K July 5-11	0	1,075	0	0	2,550	3,625
L July 12-18	0	519	0	0	407	926
M July 19-25	0	7,475	0	0	13,555	21,030
N July 26-Aug. 1	0	12,532	3	2	26,073	38,610
O Aug. 2-8	<u>0</u>	<u>2,899</u>	<u>5</u>	<u>5</u>	<u>8,936</u>	<u>11,845</u>
<b>Total</b>	<b>0</b>	<b>24,500</b>	<b>8</b>	<b>7</b>	<b>51,521</b>	<b>76,036</b>

-continued-

Table 5. 1991 Salmon Catches (Numbers of Fish) by Species, Permanent Salmon Week\*, and Area (All Gear) (Page 4 of 6)

## BLACK HILLS SECTION 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
I June 21-27	468	3,377	0	0	84	3,929
J June 28-July 4	162	9,670	3	0	633	10,463
M July 19-25	1	2,365	17	0	950	3,333
O Aug. 2-8	4	16,382	6	35	1,686	2,701
Total	635	16,382	26	35	3,353	20,431

## NELSON LAGOON SECTION 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
F May 31-June 6	433	598	0	0	0	1,031
G June 7-13	1,216	4,657	0	0	0	5,873
H June 14-20	1,115	21,696	0	0	0	22,811
I June 21-27	530	31,775	0	0	0	32,305
J June 28-July 4	55	6,268	0	0	0	6,323
K July 5-11	67	77,933	0	0	20	78,020
L July 12-18	19	51,748	1	1	284	52,053
M July 19-25	8	43,387	22	5	1,617	45,039
N July 26-Aug. 1	3	19,923	29	4	2,498	22,457
O Aug. 2-8	2	8,818	324	9	1,839	10,992
P Aug. 9-15	0	3,292	1,676	2	727	5,697
Q Aug. 16-22	0	1,526	6,921	0	311	8,758
R Aug. 23-29	2	1,808	15,147	11	65	17,033
S Aug. 30-Sept. 5	0	1,051	20,406	0	10	21,467
T Sept. 6-12	0	155	21,994	0	3	22,152
Total	3,450	274,635	66,520	32	7,374	352,011

## HERENDEEN BAY 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
K July 5-11	0	1	0	0	2,200	2,201
L July 12-18	0	51	0	0	10,466	10,517
Total	0	52	0	0	12,666	12,718

## PORT MOLLER TO CAPE SENIAVIN 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
E May 24-30	13	5	0	0	5	23
F May 31-June 6	356	266	0	0	24	646
G June 7-13	219	1,100	0	0	117	1,436
H June 14-20	156	13,658	0	0	543	14,357
I June 21-27	903	119,433	0	0	1,791	122,127
K July 8-11	22	92,848	0	7	5,247	98,124
L July 12-18	52	107,120	30	13	15,087	122,302
M July 19-25	38	76,809	92	42	21,648	98,665
N July 26-Aug. 1	28	60,535	223	172	18,257	79,225
O Aug. 2-8	22	73,244	600	160	12,406	86,432
P Aug. 9-15	19	103,235	1,620	110	4,345	109,329
Q Aug. 16-22	11	133,131	6,717	97	2,662	142,618
R Aug. 23-29	4	146,739	11,392	32	1,137	159,304
S Aug. 30-Sept. 5	2	81,552	10,919	10	304	92,787
T Sept. 6-12	1	34,252	3,364	0	50	37,667
U Sept. 13-15	0	5,273	1,570	0	10	6,853
Total	1,846	1,049,200	36,527	643	83,679	1,171,895

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Table 5. 1991 Salmon Catches (Numbers of Fish) by Species, Permanent Salmon Week\*, and Area (All Gear) (Page 5 of 6)

## CAPE SENIAVIN TO STROGONOF POINT 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
G June 7-13	1	969	0	0	0	970
H June 14-20	0	2,090	0	0	0	2,090
I June 21-27	59	57,994	0	0	0	58,053
K July 5-11	59	230,611	1	7	2,810	233,488
L July 12-18	69	321,908	1,105	12	4,997	328,091
M July 19-25	43	152,331	570	24	7,257	160,225
N July 26-Aug. 1	15	58,960	521	32	4,589	64,117
O Aug. 2-8	9	20,384	318	49	928	21,688
P Aug. 9-15	0	8,290	820	6	136	9,252
Q Aug. 16-22	0	7,412	1,508	0	51	8,971
R Aug. 23-29	0	2,616	779	0	39	3,434
S Aug. 30-Sept. 5	0	1,290	1,830	0	0	3,120
<b>Total</b>	<b>255</b>	<b>864,855</b>	<b>7,452</b>	<b>130</b>	<b>20,807</b>	<b>893,499</b>

## PORT MOLLER TO STROGONOF POINT 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
E May 24-30	13	5	0	0	5	23
F May 31-June 6	356	266	0	0	24	646
G June 7-13	220	2,069	0	0	117	2,406
H June 14-20	156	15,748	0	0	543	16,447
I June 21-27	962	177,427	0	0	1,791	180,180
K July 5-11	81	323,459	1	14	8,057	331,612
L July 12-18	121	429,028	1,135	25	20,084	450,393
M July 19-25	81	229,140	662	66	28,941	258,890
N July 26-Aug. 1	43	119,495	744	204	22,856	143,342
O Aug. 2-8	31	93,628	918	209	13,334	108,120
P Aug. 9-15	19	111,525	2,440	116	4,481	118,581
Q Aug. 16-22	11	140,543	8,225	97	2,713	151,589
R Aug. 23-29	4	149,355	12,171	32	1,176	162,738
S Aug. 30-Sept. 5	2	82,842	12,749	10	304	95,907
T Sept. 6-12	1	34,252	3,364	0	50	37,667
U Sept. 13-15	0	5,273	1,570	0	10	6,853
<b>Total</b>	<b>2,101</b>	<b>1,914,055</b>	<b>43,979</b>	<b>773</b>	<b>104,486</b>	<b>2,065,394</b>

## INNER PORT HEIDEN SECTION 1991

<u>Week**</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
G June 7-13	1,300	4	0	0	1	1,305
H June 14-20	1,822	253	0	0	5	2,080
I June 21-27	11	72	0	0	3	86
J June 28-July 4	1	1,132	0	0	175	1,308
K July 5-11	1	3,381	0	0	173	3,555
L July 12-18	2	597	0	0	88	687
P Aug. 9-15	0	0	3,090	0	0	3,090
Q Aug. 16-22	2	0	12,769	0	0	12,771
R Aug. 23-29	0	0	9,446	0	0	9,446
S Aug. 30-Sept. 5	0	0	10,511	0	0	10,511
T Sept. 6-12	0	0	1,433	0	0	1,433
<b>Total</b>	<b>3,139</b>	<b>5,439</b>	<b>37,249</b>	<b>0</b>	<b>445</b>	<b>46,272</b>

continued

Table 5. 1991 Salmon Catches (Numbers of Fish) by Species, Permanent Salmon Week\*, and Area (All Gear) (Page 6 of 6)

CINDER RIVER SECTION 1991

Week**	Chinook	Sockeye	Coho	Pink	Chum	Total
O Aug. 2-8	0	116	1,268	0	48	1,432
P Aug. 9-15	2	151	9,997	0	160	10,310
Q Aug. 16-22	0	29	22,303	0	11	22,343
R Aug. 23-29	0	0	3,723	0	0	3,723
S Aug. 30-Sept. 5	0	0	10,641	0	0	10,641
T Sept. 6-12	0	0	2,711	0	0	2,711
Total	2	296	50,643	0	219	51,160

\*\*\*ENTIRE NORTH PENINSULA 1991

Week**	Chinook	Sockeye	Coho	Pink	Chum	Total
F May 31-June 6	1,000	2,000	0	0	0	3,000
G June 7-13	3,000	11,000	0	0	0	14,000
H June 14-20	3,000	61,000	0	0	1,000	65,000
I June 21-27	2,000	251,000	0	0	2,000	255,000
J June 28-July 4	0	44,000	0	0	2,000	46,000
K July 5-11	0	457,000	0	0	16,000	473,000
L July 12-18	0	487,000	1,000	0	32,000	520,000
M July 19-25	0	290,000	1,000	0	51,000	342,000
N July 26-Aug. 1	0	152,000	1,000	0	51,000	204,000
O Aug. 2-8	0	106,000	3,000	0	26,000	135,000
P Aug. 9-15	0	115,000	17,000	0	5,000	137,000
Q Aug. 16-22	0	142,000	50,000	3,000	4,000	199,000
R Aug. 23-29	0	151,000	40,000	0	1,000	192,000
S Aug. 30-Sept. 5	0	84,000	54,000	0	0	138,000
T Sept. 6-12	0	34,000	48,000	0	0	82,000
U Sept. 13-19	0	5,000	2,000	0	0	7,000
Total	9,000	2,392,000	217,000	3,000	191,000	2,812,000

\*\*\*ENTIRE ALASKA PENINSULA - ALEUTIANS ISLANDS AREA 1991

Week**	Chinook	Sockeye	Coho	Pink	Chum	Total
F May 31-June 6	1,000	2,000	0	0	0	3,000
G June 7-13	3,000	46,000	0	0	0	49,000
H June 14-20	7,000	983,000	0	277,000	354,000	1,621,000
I June 21-27	3,000	1,027,000	0	342,000	423,000	1,795,000
J June 28-July 4	0	44,000	0	0	2,000	46,000
K July 5-11	1,000	598,000	5,000	20,000	28,000	652,000
L July 12-18	1,000	554,000	15,000	66,000	49,000	685,000
M July 19-25	1,000	386,000	114,000	621,000	129,000	1,251,000
N July 26-Aug. 1	1,000	258,000	84,000	2,907,000	202,000	3,452,000
O Aug. 2-8	0	178,000	35,000	3,641,000	208,000	4,062,000
P Aug. 9-15	0	169,000	47,000	2,299,000	226,000	2,741,000
Q Aug. 16-22	0	158,000	65,000	426,000	125,000	774,000
R Aug. 23-29	0	151,000	40,000	0	1,000	192,000
S Aug. 30-Sept. 5	0	90,000	57,000	0	2,000	149,000
T Sept. 6-12	0	44,000	65,000	0	15,000	124,000
U Sept. 13-19	0	9,000	3,000	0	0	12,000
V Sept. 20-26	0	2,000	0	0	0	2,000
Total	18,000	4,699,000	530,000	10,599,000	1,764,000	17,610,000

\*Permanent salmon weeks are the 1987 statistical weeks and will be used every year beginning in 1990. Previously, differences in statistical weeks between years made much of the data uncomparable.

\*\*The weeks listed here do not necessarily include the entire week. A complete list of permanent statistical weeks is at the end of the report.

\*\*\*Catches for the entire South Peninsula, North Peninsula, and Alaska Peninsula Islands Areas are rounded to the nearest thousand by week, consequently the totals may be slightly in error. Test fishing catches are not included in this table, therefore the figures are slightly lower than those in Table 2.

Table 6. 1991 Salmon Catches in Numbers of Fish (Does not Include Test Fish Catches) (Page 1 of 2)

SOUTHEASTERN DISTRICT						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
Seine	3,002	416,336	162,798	4,083,119	383,789	5,049,044
Set Gillnet	<u>864</u>	<u>525,682</u>	<u>29,928</u>	<u>295,150</u>	<u>125,630</u>	<u>977,254</u>
Total	3,866	942,018	192,726	4,378,269	509,419	6,026,298
SOUTH CENTRAL DISTRICT						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
Seine	201	43,219	8,384	3,260,660	153,619	3,466,083
Set Gillnet	<u>1</u>	<u>1,058</u>	<u>875</u>	<u>9,986</u>	<u>2,933</u>	<u>14,853</u>
Total	202	44,277	9,259	3,270,646	156,552	3,480,936
SOUTHWESTERN AND UNIMAK DISTRICTS						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
Seine	2,003	691,783	27,933	2,886,220	602,098	4,210,037
Drift Gillnet	1,299	561,211	51,216	27,913	281,597	923,236
Set Gillnet	<u>140</u>	<u>65,242</u>	<u>32,089</u>	<u>33,548</u>	<u>22,788</u>	<u>153,807</u>
Total	3,442	1,318,236	111,238	2,947,681	906,483	5,287,080
SOUTH PENINSULA TOTAL						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
Seine	5,206	1,151,338	199,115	10,229,999	1,139,506	12,725,164
Drift Gillnet	1,299	561,211	51,216	27,913	281,597	923,236
Set Gillnet	<u>1,005</u>	<u>591,982</u>	<u>62,892</u>	<u>338,684</u>	<u>151,351</u>	<u>1,145,914</u>
Total	7,510	2,304,531	313,223	10,596,596	1,572,454	14,794,314
ALEUTIAN ISLANDS AREA						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
Seine	<u>0</u>	<u>796</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>796</u>
Total	0	796	0	0	0	796
NORTHWESTERN DISTRICT						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
Seine	2	126,744	18,435	3,381	60,139	208,701
Drift Gillnet	34	32,608	514	7	2,190	35,353
Set Gillnet	<u>7</u>	<u>21,875</u>	<u>8</u>	<u>21</u>	<u>411</u>	<u>22,322</u>
Total	43	181,227	18,957	3,409	62,740	266,376

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Table 6. 1991 Salmon Catches in Numbers of Fish (Does not Include Test Fish Catches) (Page 2 of 2)

NORTHERN DISTRICT						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
Seine	0	10,824	0	0	12,396	23,220
Drift Gillnet	6,397	1,974,069	142,089	707	99,582	2,223,744
Set Gillnet	<u>2,930</u>	<u>225,966</u>	<u>56,328</u>	<u>133</u>	<u>16,565</u>	<u>301,022</u>
Total	9,327	2,210,859	198,417	840	128,543	2,547,986
NORTH PENINSULA TOTAL						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
Seine	2	137,568	18,435	3,381	72,535	231,921
Drift Gillnet	6,431	2,007,577	142,603	714	101,772	2,259,097
Set Gillnet	<u>2,937</u>	<u>246,941</u>	<u>56,336</u>	<u>154</u>	<u>16,976</u>	<u>323,344</u>
Total	9,370	2,392,086	217,374	4,249	191,283	2,814,362
ALASKA PENINSULA-ALEUTIAN ISLANDS AREAS TOTAL						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
Seine	5,208	1,289,702	217,550	10,233,380	1,212,041	12,957,881
Drift Gillnet	7,730	2,568,788	193,819	28,627	383,369	3,182,333
Set Gillnet	<u>3,942</u>	<u>838,923</u>	<u>119,228</u>	<u>338,838</u>	<u>168,327</u>	<u>1,469,258</u>
Total	16,880	4,697,413	530,597	10,600,845	1,763,737	17,609,472
CATCH BY AREA T PERMIT HOLDERS						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
Drift Gillnet	2,826	498	76,525	0	225	80,074
Set Gillnet	<u>0</u>	<u>42</u>	<u>8,950</u>	<u>0</u>	<u>6</u>	<u>8,998</u>
Total	2,826	540	85,475	0	231	89,072
CATCH BY AREA M PERMIT HOLDERS						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
Seine	5,208	1,289,702	217,550	10,233,380	1,212,041	12,957,881
Drift Gillnet	4,904	2,568,290	117,294	28,627	383,144	3,102,259
Set Gillnet	<u>3,942</u>	<u>838,881</u>	<u>110,278</u>	<u>338,838</u>	<u>168,321</u>	<u>1,460,260</u>
Total	14,054	4,696,873	445,122	10,600,845	1,763,506	17,520,400

Table 7. Southeastern District Mainland fishery, excluding the Northwest Stepovak Section, estimated sockeye interception of Chignik destined salmon, 1991.

Date	Total Catch	Chignik Contribution	Cumulative Chignik Catch	Percent of Total
June 12 <sup>1</sup>	12,623	10,098	10,098	4.4
June 13 <sup>1</sup>	18,672	14,938	25,036	6.5
June 14 <sup>1</sup>	20,891	16,713	41,748	7.3
June 15 <sup>1</sup>	32,019	25,615	67,364	11.2
June 20 <sup>1</sup>	18,469	14,775	82,139	6.5
June 21 <sup>1</sup>	42,596	34,077	116,216	14.9
June 25 <sup>1</sup>	21,283	17,026	133,242	7.4
July 10 <sup>1</sup>	22,642	18,114	151,356	7.9
July 15	593	474	151,830	0.2
July 16 <sup>2</sup>	1,105	884	152,714	0.4
July 27	10,820	8,656	161,370	3.8
July 28	11,855	9,484	170,854	4.1
July 31	7,354	5,883	176,737	2.6
August 1	10,365	8,292	185,029	3.6
August 2	7,163	5,730	190,759	2.5
August 5	3,385	2,708	193,467	1.2
August 6	4,481	3,585	197,052	1.6
August 7	4,627	3,702	200,754	1.6
August 10	6,239	4,991	205,745	2.2
August 11	6,398	5,118	210,863	2.2
August 12	5,408	4,326	215,189	1.9
August 15	2,214	1,771	216,960	0.8
August 16	1,811	1,448	218,408	0.6
August 17	620	496	218,904	0.2
August 18	263	210	219,114	0.1
Sept 1	1,065	852	219,966	0.4
Sept 2	1,841	1,473	221,439	0.6
Sept 3	845	676	222,115	0.3
Sept 4	232	186	222,301	0.1
Sept 5	577	462	222,763	0.2
Sept 6	925	740	223,503	0.3
Sept 9	608	486	223,989	0.2
Sept 10	2,278	1,822	225,811	0.8
Sept 11	554	443	226,254	0.2
Sept 12	823	658	226,912	0.3
Sept 13	351	281	227,193	0.1
Sept 17	788	630	227,823	0.3
Sept 18	625	500	228,323	0.2
Sept 19	680	544	228,867	0.2
Sept 20	53	42	228,909	0.0
Sept 27	27	22	228,931	0.0

-Continued-

Table 7. (page 2 of 2)

Date	Total Catch	Chignik Contribution	Cumulative Chignik Catch	Percent of Total
Total	286,168 <sup>3</sup>	228,931	228,931	100.0

<sup>1</sup>Set gill net gear only is allowed prior to July 11.

<sup>2</sup>After July 25 the allocation method based on the Southeastern District Salmon Management Plan is no longer in effect.

<sup>3</sup>Assumed 80% of season total sockeye catch is destined for Chignik, numbers within the column, when summed, may not equal the total due to rounding.

Table 8. Harvest of Chignik bound sockeye salmon in the Chignik, Cape Igvak, and Southeastern District Mainland areas, 1964-91.<sup>a</sup>

Year	Chignik		Cape Igvak		Southeast District Mainland <sup>b</sup>		Total
	Catch	%	Catch	%	Catch	%	
1964 <sup>c</sup>	556,890	90.57	14,980	2.44	43,021	7.00	614,890
1965 <sup>c</sup>	599,553	89.94	11,021	1.65	56,020	8.40	666,594
1966 <sup>c</sup>	219,794	87.99	18,003	7.21	12,011	4.81	249,808
1967 <sup>c</sup>	462,000	91.48	23,014	4.56	20,021	3.96	505,034
1968 <sup>c</sup>	977,382	82.53	135,951	11.48	70,959	5.99	1,184,292
1969 <sup>c</sup>	394,135	78.96	97,982	19.63	7,013	1.41	499,130
1970 <sup>c</sup>	1,325,883	72.79	427,339	23.46	68,181	3.74	1,821,403
1971 <sup>c</sup>	1,016,136	76.97	253,044	19.17	50,952	3.86	1,320,132
1972 <sup>c</sup>	378,669	86.32	42,012	9.58	17,999	4.10	438,680
1973 <sup>d</sup>	769,256	88.99	57,098	6.61	38,102	4.41	864,456
1974 <sup>d</sup>	530,278	74.12	120,602	16.86	64,563	9.02	715,443
1975 <sup>d</sup>	115,984	81.78	23,635	16.67	2,205	1.55	141,824
1976 <sup>d</sup>	792,024	83.08	117,926	12.37	43,356	4.55	953,306
1977 <sup>d</sup>	1,547,285	90.61	128,852	7.55	31,498	1.34	1,707,635
1978 <sup>ef</sup>	1,454,389	85.48	225,078	13.23	22,029	1.29	1,701,496
1979 <sup>eg</sup>	794,504	91.98	13,950	1.61	55,344	6.41	863,798
1980 <sup>eg</sup>	670,001	91.17	32	0.00	64,862	8.83	734,895
1981 <sup>eg</sup>	1,606,290	79.89	282,342	14.04	121,870	6.06	2,010,502
1982 <sup>eg</sup>	1,250,939	84.53	166,219	11.23	62,767	4.24	1,479,925
1983 <sup>eg</sup>	1,450,832	72.57	320,932	16.05	227,392	11.37	1,999,156
1984 <sup>eg</sup>	2,474,405	73.93	449,360	13.43	423,068	12.64	3,346,833
1985 <sup>eh</sup>	696,169	79.91	123,627	14.19	51,421	5.90	871,217
1986 <sup>eh</sup>	1,456,729	82.64	188,017	10.67	118,006	6.69	1,762,752
1987 <sup>eh</sup>	1,659,915	78.02	320,813	15.08	146,886	6.90	2,127,614
1988 <sup>eh</sup>	678,912	94.95	10,520	1.47	25,565	3.58	714,997
1989 <sup>eh</sup>	502,477	99.12	0	0.00	4,485	0.88	506,962
1990 <sup>eh</sup>	1,196,599	84.92	83,967	5.96	128,601	9.13	1,409,167
1991 <sup>ehi</sup>	1,966,986	80.49	324,075	13.26	152,714	6.25	2,443,775
1985-91 Average							
	1,165,398	82.93	150,146	10.69	89,668	6.38	1,405,212

<sup>a</sup>Cape Igvak and Southeastern District Mainland fisheries figures represent 80% of the total sockeye catches for those areas through July 25, it is estimated that about 80% of the sockeye caught in the Cape Igvak Section and the Southeastern District Mainland (exclusive of the Northwest Stepovak Section) are destined for Chignik.

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<sup>a</sup>The Southeastern District Mainland area includes Stepovak, Beaver, and Balboa Bays. This fishery is also referred to as the Balboa-Beaver-Stepovak or Balboa-Stepovak fishery.

<sup>c</sup>Catch and percentage figures are total for the entire season. Prior to 1973, Cape Igvak, and Southeastern District Mainland fisheries were regulated by set weekly fishing periods in the regulation book, usually five days per week. The situation was sometimes modified due to poor escapements at Chignik.

<sup>d</sup>Catch figures and percentages after 1972 are only through July 25. During 1973 through 1977 all three fisheries were managed on a day for day basis.

<sup>e</sup>Catch figures and percentages after 1972 are only through July 25. Beginning with the 1978 season, the current Cape Igvak Fishery Management Plan as in effect today was implemented. The Cape Igvak fishery was allocated 15.0 percent of the total Chignik destined sockeye catch.

<sup>f</sup>During 1978, seining prior to July 11 was disallowed in Beaver, Balboa, and Stepovak Bays. The set gill net fishery was allowed to fish 3 days per week through July 10, after which the fishery was managed on the basis of local stocks.

<sup>g</sup>During 1979-84, five days per week were allowed in the Southeastern District Mainland area with a ceiling of 60,000 estimated Chignik destined sockeye, prior to July 11. If the Chignik Area sockeye catch was 1,000,000 or more before July 11, the 60,000 ceiling was to be dropped.

<sup>h</sup>Beginning in 1985, the Southeastern District Mainland Area was allocated 6.2 percent of the total estimated Chignik sockeye catch through July 25. After July 25, Southeastern District Mainland area is managed on a local stock basis. The allocation was changed to 6.0 percent beginning in 1988. Seining is still not allowed prior to July 11.

<sup>i</sup>Includes overescapement of 278,305 sockeye salmon counted past the Chignik River weir during the Chignik Area seiners' boycott (June 23-July 4).

Table 9. Commercial sockeye salmon harvests in the Chignik Management Area and 80 percent of the sockeye salmon catch in the Cape Igvak Section of the Kodiak Management Area and the Southeastern District Mainland fishery of the Alaska Peninsula Management Area , 1964-1990.

Year	Harvest To July 25 Only				Harvest For Entire Season <sup>a</sup>			
	Chignik	Cape Igvak	Southeast Mainland	Total	Chignik	Cape Igvak	Southeast Mainland	Total
1964	-	-	-	-	556,890	14,980	43,021	614,891
1965	-	-	-	-	599,553	11,021	56,020	666,594
1966	-	-	-	-	219,794	18,003	12,011	249,808
1967	-	-	-	-	462,000	23,014	20,021	505,035
1968	-	-	-	-	977,382	135,951	70,959	1,184,292
1969	-	-	-	-	394,135	97,982	7,013	499,130
1970	1,325,883	427,338	67,582	1,820,803	1,325,883	427,339	68,181	1,821,403
1971	-	-	-	-	1,016,136	253,044	50,952	1,320,132
1972	-	-	-	-	378,669	42,012	17,999	438,680
1973	769,256	57,098	37,614	863,968	870,352	57,098	38,266	965,716
1974	530,278	120,602	64,563	715,443	662,905	120,602	65,514	849,021
1975	115,984	23,635	2,205	141,824	399,593	23,635	2,205	425,433
1976	792,024	117,926	43,356	953,306	1,163,728	117,978	44,781	1,326,487
1977	1,547,285	128,852	31,498	1,707,635	1,972,207	128,852	35,401	2,136,460
1978	1,454,389	225,078	21,952	1,701,419	1,576,283	225,117	23,990	1,825,390
1979	794,504	13,950	55,344	863,798	1,049,497	20,436	82,153	1,152,086
1980	670,001	32	63,570	733,603	859,966	631	88,046	948,643
1981	1,606,290	282,342	121,870	2,010,502	1,839,469	283,826	166,034	2,289,329
1982	1,250,939	166,219	62,767	1,479,925	1,521,857	167,113	86,849	1,775,819
1983	1,450,832	320,932	227,392	1,999,156	1,824,175	323,004	297,429	2,444,608
1984	2,474,405	449,360	423,068	3,346,833	2,660,478	450,054	487,938	3,598,470
1985	696,169	123,627	51,421	871,217	922,151	125,134	93,206	1,140,491
1986	1,456,729	188,017	118,006	1,762,752	1,645,834	188,126	147,056	1,981,016
1987	1,659,915	320,813	146,886	2,127,614	1,898,838	343,422	188,983	2,431,243
1988	678,912	10,520	19,320	708,752	795,841	27,681	79,101	902,623
1989	502,477	0	4,485	506,962	1,159,287	0	138,567	1,297,854
1990	1,196,599	83,967	128,601	1,409,167	2,093,650	132,404	216,946	2,443,000
1991 <sup>b</sup>	1,966,986	324,075	152,714	2,443,775	2,173,970	341,530	228,931	2,744,431

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Note: (-) data not available.

<sup>a</sup>Cape Igvak entire season harvest is 80 percent of the catch. The Southeastern District Mainland entire season harvest is 80 percent of those salmon caught in the entire Southeastern District minus the Northwest Stepovak Section catch.

<sup>b</sup>Includes overescapement of 278,305 sockeye salmon counted past the Chignik River weir during the Chignik Area seiners' boycott (June 23-July 4).

Table 10. Percent of sockeye caught by gear type and season total sockeye salmon catch in the Southeastern District Mainland fishery, 1972-91.<sup>a</sup>

Year	Set Gillnet	Purse Seine	Total Catch
1972	90%	10%	22,190
1973	97%	3%	47,932
1974	74%	26%	89,419
1975	57%	43%	3,156
1976	90%	10%	59,915
1977	73%	27%	48,463
1978	87%	13%	34,761
1979	71%	29%	126,066
1980	89%	11%	130,322
1981	87%	13%	259,409
1982	93%	7%	118,032
1983	72%	28%	394,224
1984	91%	9%	680,645
1985	87%	13%	137,891
1986	91%	9%	245,511
1987	97%	3%	299,463
1988	79%	21%	158,374
1989	54%	46%	282,294
1990	57%	43%	277,460
1991	85%	15%	396,655
<hr/>			
10 year average: 1982-91			
	84%	16%	299,055
<hr/>			
20 year average 1972-91			
	81%	19%	190,609

<sup>a</sup>Includes Beaver Bay, Balboa Bay, Southwest Stepovak, Northwest Stepovak, Stepovak Flats, and East Stepovak Sections of the Southeastern District.



Table 11. Estimated orzinski sockeye salmon runs and total Southeastern District Mainland sockeye salmon catch, in numbers of fish, 1979-91.

Year	Escapement	Orzinski and American Bay Catch	Balance of Suzy Creek Dent Point Catch	Total Suzy Creek Dent Point Catch	Total Orzinski Run	Total Southeastern Mainland Catch
1935 <sup>b</sup>	28,474					
1936 <sup>b</sup>	31,720					
1937 <sup>b</sup>	15,393					
1938 <sup>b</sup>	8,675					
1939 <sup>bc</sup>	10,414					
1940 <sup>b</sup>	16,414					
1941 <sup>b</sup>	8,241					
1981	18,000	19,400	32,600	52,000	70,000	262,200
1982	9,000	6,100	3,400	9,500	18,500	118,000
1983	21,300	10,800	11,600	22,400	43,700	396,500
1984	18,600	18,600	52,300	70,900	89,500	633,300
1985	14,000	5,100	16,300	21,400	35,400	137,900
1986	10,300	12,500	49,200	61,700	72,000	245,500
1987	11,400	14,500	48,700	63,200	74,600	301,000
1988	19,300	14,500	45,000	59,500	78,800	158,400
1989	16,700	18,500	87,600	106,100	122,800	282,300
1990 <sup>b</sup>	15,000	1,257	4,796	6,053	21,053	277,460
1991 <sup>d</sup>	40,000	50,496	59,991	110,487	150,487	396,655

<sup>a</sup>Escapements are indexed total escapements, and are likely lower than actual total.

<sup>b</sup>Weir was used to count escapement.

<sup>c</sup>In 1938, adverse weather conditions may have caused only part of the run to be counted.

<sup>d</sup>Escapement count is the sum of weir counts plus aerial surveys conducted after the weir was removed.

Table 12. Shumagin Islands Section and South Unimak Sockeye and Chum Catches - All Gear Combined

	<u>Shumagin Islands</u>		<u>South Unimak</u>	
	<u>Sockeye</u>	<u>Chum</u>	<u>Sockeye</u>	<u>Chum</u>
June 1 - 12	Closed to Commercial Salmon Fishing			
June 13				
14				
15	36,992	10,882	123,658	46,321
16				
17	38,144	7,633	52,940	26,892
18	98,164	25,095	106,169	49,912
19			110,093	56,602
20	51,403	14,194	225,484	115,088
21				
22	108,569	44,798		
23			188,681	49,283
24			262,423	188,052
25			146,210	136,638
26				
27				
28				
29				
30				
<b>Total</b>	<b>333,272</b>	<b>102,602</b>	<b>1,215,658</b>	<b>668,788</b>

Table 13. Shumagin Island and South Unimak June Fisheries<sup>a</sup> (Fish in Thousands)

Year	Sockeye			Chum		
	Shumagins	South Unimak	Total	Shumagins	South Unimak	Total
1960	19	137	156	11	84	95
1961	55	199	254	36	157	193
1962	54	272	326	61	209	270
1963	33	116	149	36	81	117
1964	85	159	244	67	161	228
1965	207	568	775	45	121	166
1966	54	528	582	17	215	232
1967	69	186	255	51	73	124
1968	233	342	575	51	115	166
1969	76	781	857	13	254	267
1970	153	1,530	1,683	49	403	452
1971	45	565	610	115	554	669
1972	76	443	519	108	468	576
1973	23	239	263	23	189	212
1974	NF	NF	NF	NF	NF	NF
1975	49	190	239	36	65	101
1976	72	235	307	74	327	401
1977	46	193	239	22	93	115
1978	68	419	487	18	105	123
1979	179	683	862	41	64	105
1980	572	2,731	3,303	71	457	528
1981	351	1,474	1,825	54	521	575
1982	451	1,670	2,121	160	934	1,094
1983	416	1,545	1,961	169	615	784
1984	257	1,131	1,388	109	228	337
1985	367	1,495	1,862	134	345	479
1986	156	314	470	99	252	351
1987	141	652	793	37	406	443
1988	282	474	756	62	465	527
1989	397	1,348	1,745	48	408	456
1990	256	1,091	1,347	64	455	519
1991	333	1,216	1,549	103	669	772

<sup>a</sup>The South Unimak figures include some early July catches.

Table 14. 1975-91 South Unimak-Shumagin Islands June Salmon Harvest (Numbers of Fish), All Species

<u>Year</u>	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
1975	0	239,000	0	5,000	101,000	345,000
1976	2,000	307,000	0	24,000	401,000	734,000
1977	1,000	239,000	0	5,000	115,000	360,000
1978	1,000	487,000	0	90,000	123,000	701,000
1979	1,000	862,000	0	163,000	105,000	1,131,000
1980	3,000	3,303,000	1,000	1,607,000	528,000	5,442,000
1981	6,000	1,825,000	0	461,000	575,000	2,867,000
1982	7,000	2,121,000	2,000	1,724,000	1,094,000	4,948,000
1983	13,000	1,961,000	0	55,000	784,000	2,813,000
1984	4,000	1,388,000	0	939,000	337,000	2,668,000
1985	6,000	1,862,000	2,000	109,000	479,000	2,458,000
1986	2,000	470,000	0	291,000	351,000	1,114,000
1987	5,000	793,000	0	17,000	443,000	1,258,000
1988	4,000	756,000	0	219,000	527,000	1,506,000
1989	3,000	1,745,000	0	199,000	456,000	2,403,000
1990	10,000	1,347,000	0	515,000	519,000	2,391,000
1991	4,000	1,549,000	0	619,000	771,000	2,943,000

Table 15. Shumagin Islands and South Unimak Sockeye Salmon Harvests (in thousands of fish) 1911 - 1959.

Year	Shumagin Islands	South Unimak	Total
1911	3	58	61
1912	31	144	175
1913	0	415	415
1914	0	610	610
1915	0	251	251
1916	0	539	539
1917	34	1,322	1,356
1918	44	733	777
1919	32	545	577
1920	60	954	1,014
1921	0	831	831
1922	550	2,775	3,325
1923	343	1,340	1,683
1924	237	971	1,208
1925	374	357	731
1926	491	1,898	2,389
1927	185	455	640
1928 - 1933 Unavailable			
1934	1,019	516	1,535
1935	549	210	759
1936	1,490	1,531	3,021
1937	498	803	1,301
1938	454	164	618
1939	707	474	1,181
1940	713	479	1,192
1941	294	206	496
1942	412	152	564
1943	1,356	428	1,784
1944	264	188	452
1945	375	218	593
1946	257	342	599
1947	229	782	1,011
1948	126	276	402
1949	167	84	251
1950	134	292	426
1951	35	82	117
1952	121	191	312
1953	105	191	296
1954	49	325	374
1955	52	315	367
1956	47	290	337
1957	44	50	94
1958	28	104	132
1959	78	58	136

Table 16. South Unimak June Fishery Daily Sockeye Catches (Numbers in Thousands of Fish).

Date	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
June 1						0.3	0.1		0.5								
2							0.3	0.9	3.7								
3		0.1					0.3	0.2	7.1	25.0	2.4						
4							0.6	1.6	9.7	49.2							
5				0.3	0.5			1.7	39.6		11.8						
6				0.1	1.7		0.6	3.6	80.8								
7		1.0		0.4	0.9			2.4			39.2						
8		1.4	0.3	0.1	1.5	4.1	1.9	3.1					4.4				
9			0.4	0.4	2.5	5.0	6.4	1.6			79.4						
10	1.4	1.3	2.3	0.3	1.7	3.2	6.6	7.2					10.0		147.5		
11		5.1			3.7		47.6	12.7				8.3	17.8	11.5			
12	8.9			5.2	1.6		73.6	13.7	200.7	486.2	200.4						
13			2.7	5.4	18.3		144.1	6.0	290.5	123.2						12.4	
14		4.8		16.5	24.2		119.7	3.3	301.1		389.0	55.1	44.2			33.5	
15		10.8	4.0	21.3	14.3	53.7	71.8	119.0					47.8	43.1			123.7
16	15.8		24.3	6.0	29.0	250.2	21.0	143.4				30.6		79.1	361.0	68.5	
17		15.6	26.6	4.4	33.1	267.2		156.7					85.4			147.5	52.9
18	38.5	26.9	29.8	37.0	92.1	313.4		105.5				91.7	66.7	58.9		91.3	106.2
19				46.2	71.7	187.8	202.4	131.3	420.3	465.8	181.6					132.6	33.7 110.1
20	10.1		68.0	38.8	118.8	198.7	226.3	22.9					56.5			441.2	81.5 225.5
21		38.9	38.5	96.1	397.0	218.9	111.5	191.0		258.1	65.6	97.8	82.2			122.2	
22		1.3		17.8	20.8	234.9	138.1	120.8					76.5	35.2		119.9	
23	40.1	44.0		54.3	22.9	107.2		155.5			333.1	20.5		115.5	265.3	106.6	188.7
24	42.9		8.9	29.0	32.6	256.9		170.0				17.3				87.9	262.4
25	33.0	14.9	28.0		27.3	146.5		9.3				25.2	45.0				146.2
26		51.0		47.3	21.9	114.5	99.7	124.1					100.3			172.8	
27				49.5	20.0	79.6	51.9	75.7						49.0			
28		3.5			14.8	82.6	24.4	23.7								13.0	
29		4.5				25.1		81.4									
30		6.5				3.4	18.0	61.4									
July 1		4.1			1.1												
2					0.5												
3					9.6												

Table 17. Shumagin Islands June Fishery Daily Sockeye Catches (Numbers in Thousands of Fish).

Date	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
June																	
1																	
2									2.0								
3		0.2							1.6	6.4	7.0						
4		0.1							7.8	16.5							
5									13.0		9.5						
6									7.9								
7		0.3									42.6						
8		0.1	0.1				2.3						0.1				
9			3.4					0.3									
10		0.5	3.7				1.6	1.5					31.6		54.4		
11	2.8	1.0		0.4			26.7	0.9				6.3		7.9			
12				3.7			22.3		90.8	75.1	59.9						
13	2.3		12.1	3.6	6.2		32.7		87.1	39.9						8.3	
14		1.1		0.1	12.7		37.0	1.6	78.6		75.5	28.4	23.6				
15		4.5		9.1	12.4	58.1	20.3	14.9						6.1		3.2	37.0
16	5.7		4.4	4.9	55.4	40.3	25.8				25.0		12.1	89.2	28.3		
17		5.5		0.2	7.8	31.1		40.7						13.0		44.1	38.1
18	23.9	12.5		5.0	8.6	34.4		23.4				14.0		67.7		44.2	98.2
19				5.7	16.8	10.1	24.3	42.8	127.7	76.3	53.0				73.8	9.8	
20	20.2		26.5	2.6	13.6	20.6	54.2	23.5					55.1		179.6	9.1	51.4
21		26.7		2.3	21.3	32.7	43.4	63.8			62.2	22.6		38.6		42.5	
22				0.1	7.1	17.4	36.4	98.0								66.0	108.6
23		19.7		3.3	8.0	13.4		65.9				23.0		51.9			
24				4.8	4.1	6.3						13.3		50.5			
25					17.8	13.0						23.5					
26				10.1	18.5	73.6		47.7		42.5	26.2		30.2				
27				7.1	10.7	47.1								34.5			
28				5.4	8.7	45.2					30.0						
29						10.7											
30						6.0											
July						13.5											
1						29.9											
2						15.6											
3						38.0											
4																	

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Table 18. South Unimak June Fishery Daily Chum Catches (Numbers in Thousands of Fish)

Date	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
June 1							0.2		0.8								
2					1.0			0.5	3.6	5.6							
3			0.3					0.6	1.0	7.3	12.9	8.9					
4								1.2	2.7	13.0	32.5						
5					0.1	0.4			83.0	17.3		34.1					
6					0.1	2.6		1.2	19.2	21.2							
7			3.6	0.2	0.4	0.7			10.2			36.0					
8			8.6	0.4	0.1	1.9	0.3	1.8	13.3					4.9			
9				0.9	0.2	1.3	0.4	10.9	4.2			53.0					
10	2.1	13.9	4.2	1.1	1.5	1.6	4.8	10.4					10.0		83.0		
11		55.4			3.4		24.0	19.8				13.8	22.5	18.5			
12	7.0			2.9	0.7		36.0	35.8	88.5	90.7	48.5						
13			2.0	1.9	3.9		48.2	13.5	109.0	23.4						5.1	
14		14.9		4.3	7.1		24.1	7.0	99.3		65.7	54.8	24.1			11.8	
15		32.8	2.2	5.4	1.9	8.3	10.4	98.2					30.2	35.5			46.3
16	13.4		18.7	2.6	0.7	36.7	7.5	105.0				35.3		70.3	145.9	18.8	
17		31.7	12.5	1.6	1.1	41.3		92.0					63.8			41.9	26.9
18	8.9	52.0	12.0	7.2	2.2	58.2		57.9				97.5	54.9	49.9		25.7	49.9
19				7.7	2.7	34.0	45.6	66.6	169.6	68.4	36.3				38.3	9.1	56.6
20	3.3		21.6	3.7	6.8	27.4	39.7	6.4					23.1		119.9	28.6	115.1
21		23.4		11.0	7.5	51.9	37.9	52.2	73.3		19.5	32.0	48.0	64.7		57.5	
22				2.0	3.3	44.0	26.9	43.4					42.7	26.3		35.6	
23	9.4	30.7		10.6	3.1	24.1		55.8			42.7	6.6		109.4	20.5	46.8	49.3
24	21.2		6.2	9.3	2.7	52.7		50.6				4.7				76.1	188.1
25		14.6	13.4		1.6	24.5		2.3				8.1	24.2				136.6
26		44.1		12.8	2.4	18.3	47.3	43.7					56.6			92.4	
27				17.4	2.9	18.5	75.1	42.7						90.2			
28		2.5			0.7	11.4	42.8	7.9								6.0	
29		3.4				2.1		45.3									
30		4.5				1.3	34.5	30.6									



Table 19. Shumagin Islands June Fishery Daily Chum Catches (Numbers in Thousands of Fish)

Date	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
June 1		0.1															
2									4.6								
3		2.3							6.8	2.3	11.3						
4		0.8							6.4	11.8							
5									14.0		13.0						
6									5.4								
7		0.8									31.0						
8		0.1	0.2				3.3										
9		0.2		5.5					1.2								
10		5.4	3.5				1.5	3.2					8.9		22.7		
11	5.2	6.3					8.1	1.6				3.9		0.7			
12																	
13	1.6		8.4	1.9	1.8		4.3		40.3	13.0						1.0	
14		1.3			4.7		3.0	6.2	23.3		20.0	23.0	6.8				
15		7.5		1.8	2.1	5.9	1.4	12.9						0.7		0.9	10.9
16	5.3			1.1	1.4	3.3	3.8	12.7				14.2		1.6	6.3	5.1	
17		9.9			2.2	6.0		16.2						1.7		13.6	7.6
18	12.6	12.6		0.8	2.6	2.9		6.8				12.1		16.0		16.3	25.1
19				0.9	4.1	1.5	4.4	9.0	34.4	16.6	10.1				2.3	3.8	
20	10.6		4.4	0.6	2.7	1.2	6.2	9.7					13.1		15.9	1.5	14.2
21		15.5		0.7	3.4	2.2	5.6	17.5			15.0	10.9		8.5		9.0	
22					1.1	1.1	6.8	30.4								12.3	44.8
23		10.9	1.9	1.1	1.2			17.3				13.1		10.6			
24			2.3	0.4	0.9							8.5		13.1			
25				3.5	1.6							13.3					
26			2.9	3.8	7.2			15.6		38.6	8.9		8.2				
27			1.1	3.9	4.9									8.9			
28			0.8	2.2	5.8						9.1						
29			2.5														
30			2.1														

Table 20. Shumagin Island and South Unimak June Fisheries (Fish in Thousands)

Year	SHUMAGINS			UNIMAK			TOTAL		
	Sockeye	Chum	Sockeye/ Chum	Sockeye	Chum	Sockeye/ Chum	Sockeye	Chum	Sockeye/ Chum
1960	19	11	1.73	137	84	1.63	156	95	1.64
1961	55	36	1.52	199	157	1.26	254	193	1.32
1962	54	61	.88	272	209	1.30	326	270	1.21
1963	33	36	.91	116	81	1.43	149	117	1.27
1964	85	67	1.27	159	161	0.99	244	228	1.07
1965	207	45	4.60	568	121	4.69	775	166	4.67
1966	54	17	3.18	528	215	2.46	582	232	2.51
1967	69	51	1.35	186	73	2.55	255	124	2.06
1968	233	51	4.57	342	115	2.97	575	166	3.46
1969	76	13	5.85	781	254	3.07	857	267	3.21
1970	153	49	3.12	1,530	403	3.80	1,683	452	3.72
1971	45	115	0.39	565	554	1.02	610	669	0.91
1972	76	108	0.70	443	468	0.95	519	576	0.90
1973	23	23	1.00	239	189	1.26	263	212	1.24
1974	NF	NF	-	NF	NF	-	NF	NF	-
1975	49	36	1.36	190	65	2.92	239	101	2.37
1976	72	74	0.97	235	327	0.72	307	401	0.77
1977	46	22	2.09	193	93	2.08	239	115	2.08
1978	68	18	3.78	419	105	3.99	487	123	3.96
1979	179	41	4.37	683	64	10.67	862	105	8.21
1980	572	71	8.06	2,731	457	5.98	3,303	528	6.26
1981	351	54	6.50	1,474	521	2.83	1,825	575	3.17
1982	451	160	2.82	1,670	934	1.79	2,121	1,094	1.94
1983	416	169	2.46	1,545	615	2.51	1,961	784	2.50
1984	257	109	2.36	1,131	228	4.96	1,388	337	4.12
1985	367	134	2.74	1,495	345	4.33	1,862	479	3.89
1986	156	99	1.58	314	252	1.25	470	351	1.34
1987	141	37	3.81	652	406	1.61	793	443	1.79
1988	282	62	4.55	474	465	1.02	756	527	1.43
1989	397	48	8.27	1,348	408	3.30	1,745	456	3.83
1990	256	64	4.00	1,091	455	2.40	1,347	519	2.60
1991	333	103	3.23	1,216	669	1.82	1,549	772	2.01

Table 21. Sockeye per chum South Unimak and Shumagin Islands June fishery.

<u>SOUTH UNIMAK</u>				
<u>Year</u>	<u>Purse Seine</u>	<u>Drift Gillnet</u>	<u>Set Gillnet</u>	<u>All Gear</u>
1980	5.8	6.7	54.2	6.0
1981	2.3	3.7	21.4	2.8
1982	2.1	1.5	11.1	1.8
1983	2.3	2.9	12.8	2.5
1984	5.2	4.4	36.4	5.0
1985	6.4	2.8	13.2	4.3
1986	1.3	1.2	6.7	1.2
1987	1.5	1.6	5.2	1.6
1988	0.9	1.0	5.2	1.0
1989	3.8	2.7	12.8	3.3
1990*	2.4	2.4	9.3	3.5
1991*	1.6	2.1	6.5	1.8
<hr/>				
Average	3.0	2.8	16.2	2.9

<u>SHUMAGIN ISLANDS</u>			
<u>Year</u>	<u>Purse Seine</u>	<u>Set Gillnet</u>	<u>Total</u>
1980	8.0	9.0	8.1
1981	6.2	25.5	6.5
1982	2.8	6.7	2.8
1983	2.4	16.3	2.5
1984	2.2	19.2	2.4
1985	2.7	4.3	2.7
1986	1.4	4.7	1.6
1987	3.1	13.2	3.8
1988	4.1	5.6	4.6
1989	8.1	11.9	8.4
1990*	3.7	8.6	4.0
1991*	2.8	9.5	3.2
<hr/>			
Average	4.0	11.2	4.2

\*Gear depth limitations in effect.

Table 22. Percent composition of sockeye and chum salmon catches by gear type, 1977-1991.

<u>SOUTH UNIMAK JUNE FISHERY</u>						
<u>Year</u>	<u>Sockeye</u>			<u>Chum</u>		
	<u>Seine</u>	<u>Drift Gillnet</u>	<u>Set Gillnet</u>	<u>Seine</u>	<u>Drift Gillnet</u>	<u>Set Gillnet</u>
1977	15.0	84.5	0.5	10.8	89.0	0.2
1978	18.1	81.4	0.5	9.9	90.0	0.1
1979	71.0	28.8	0.2	31.0	68.9	0.1
1980	76.0	23.5	0.5	79.0	20.9	0.1
1981	51.0	46.9	2.1	64.0	35.7	0.3
1982	54.0	44.8	1.2	46.0	53.8	0.2
1983	60.0	39.3	0.7	66.0	33.9	0.1
1984	64.0	35.0	1.0	60.0	39.9	0.2
1985	62.0	37.3	0.7	42.0	57.8	0.2
1986	46.7	51.7	1.6	43.8	55.9	0.3
1987	36.5	61.4	2.1	38.4	60.9	0.7
1988	29.8	67.0	3.2	33.6	65.8	0.6
1989	59.4	38.1	2.5	52.1	47.3	0.6
1990	56.8	41.5	1.7	57.9	41.7	0.4
1991	<u>53.5</u>	<u>44.4</u>	<u>2.1</u>	<u>61.1</u>	<u>38.3</u>	<u>0.6</u>
<b>Average</b>	<b>50.2</b>	<b>48.4</b>	<b>1.4</b>	<b>46.4</b>	<b>53.3</b>	<b>0.3</b>

<u>SHUMAGIN ISLANDS JUNE FISHERY</u>				
	<u>Sockeye</u>		<u>Chum</u>	
	<u>Seine</u>	<u>Set Gillnet</u>	<u>Seine</u>	<u>Set Gillnet</u>
1977	94.9	5.1	99.0	1.0
1978	97.2	2.8	96.3	3.7
1979	92.4	7.6	95.7	4.3
1980	96.4	3.6	96.7	3.3
1981	94.8	5.2	98.7	1.3
1982	97.3	2.7	98.9	1.1
1983	97.4	2.6	99.6	0.4
1984	94.7	5.3	99.3	0.7
1985	95.2	4.8	97.0	3.0
1986	85.0	15.0	95.0	5.0
1987	75.5	24.5	93.0	7.0
1988	62.8	37.2	69.7	30.3
1989	90.9	9.1	93.6	6.4
1990	85.3	14.7	93.1	6.9
1991	<u>80.6</u>	<u>19.4</u>	<u>93.3</u>	<u>6.7</u>
<b>Average</b>	<b>89.4</b>	<b>10.5</b>	<b>94.6</b>	<b>5.4</b>

Table 23. South Peninsula (South Unimak-Shumagin Islands) June fishery vs. actual Bristol Bay harvest, sockeye salmon 1975-1991

Year	Guideline Harvest Level (GHL)	GHL % of Actual Bristol Bay Catch	Actual S. Peninsula Catch	S. Peninsula % of Actual Bristol Bay Catch	Actual Bristol Bay Catch	S. Peninsula GHL if Actual Bristol Bay Catch Was Forecasted
1975	215,000	4.39	239,000	4.88	4,899,000	407,000
1976	425,000	7.56	307,000	5.46	5,619,000	456,000
1977	237,000	4.86	239,000	4.90	4,878,000	405,000
1978	522,000	5.26	487,000	4.91	9,928,000	824,000
1979	1,100,000	5.13	862,000	4.02	21,429,000	1,779,000
1980 <sup>a</sup>	3,068,000	12.91	3,303,000	13.90	23,762,000	1,972,000
1981	1,760,000	6.87	1,825,000	7.13	25,503,000	2,125,000
1982	2,258,000	14.95	2,121,000	14.04	15,104,000	1,254,000
1983	1,793,000	4.80	1,961,000	5.25	37,372,000	3,102,000
1984	1,356,000	5.49	1,389,000	5.62	24,710,000	2,051,000
1985	1,685,000	7.11	1,862,000	7.86	23,703,000	1,967,000
1986 <sup>b</sup>	1,107,000	7.02	470,000	2.98	15,776,000	1,310,000
1987	775,000	4.82	793,000	4.93	16,069,000	1,334,000
1988 <sup>b,c</sup>	1,542,000	11.01	756,000	5.40	14,006,000	1,162,000
1989 <sup>c</sup>	1,463,000	5.10	1,745,000	6.08	28,710,000	2,383,000
1990 <sup>c</sup>	1,327,000	4.00	1,347,000	4.06	33,165,000	2,752,000
1991 <sup>c</sup>	1,920,000	7.32	1,549,000	5.90	26,233,000	2,177,000

<sup>a</sup> 1980 Bristol Bay sockeye catch would have been much larger had it not been for a lengthy strike.

<sup>b</sup> The guideline harvest level if chum salmon restrictions were not placed on the fishery. Includes only South Unimak and Shumagin Islands Section June fisheries. Target percentage is 8.3

<sup>c</sup> Bristol Bay catch figures are preliminary.

Table 24. South Unimak June Fishery vs. Actual Bristol Bay Harvest, sockeye salmon 1975-1991

Year	Guideline Harvest Level (GHL)	% of Actual Bristol Bay Catch	Actual S. Unimak Catch	South Unimak % of Actual Bristol Bay Catch	Actual Bristol Bay Catch	S. Unimak GHL if Actual Bristol Bay Catch Was Forecasted
1975	165,000	3.37	190,000	3.88	4,899,000	333,000
1976	350,000	6.23	235,000	3.18	5,619,000	382,000
1977	195,000	4.00	193,000	3.96	4,878,000	332,000
1978	428,000	4.31	419,000	4.22	9,928,000	675,000
1979	900,000	4.20	683,000	3.19	21,429,000	1,457,000
1980 <sup>a</sup>	2,513,000	10.58	2,731,000	11.49	23,762,000	1,616,000
1981	1,442,000	5.63	1,474,000	5.76	25,603,000	1,741,000
1982	1,850,000	12.21	1,670,000	11.03	15,146,000	1,030,000
1983	1,469,000	3.93	1,545,000	4.13	37,372,000	2,541,000
1984	1,111,000	4.50	1,132,000	4.58	24,710,000	1,680,000
1985	1,380,000	5.82	1,495,000	6.31	23,703,000	1,612,000
1986 <sup>b</sup>	907,000	5.71	314,000	1.98	15,889,000	1,080,000
1987	635,000	3.96	652,000	4.06	16,048,000	1,091,000
1988 <sup>b,c</sup>	1,263,000	9.01	474,000	3.38	14,011,000	883,000
1989 <sup>c</sup>	1,199,000	4.18	1,348,000	4.70	28,710,000	1,952,000
1990 <sup>c</sup>	1,087,000	3.28	1,091,000	3.29	33,165,000	2,255,000
1991 <sup>b, c</sup>	1,573,000	6.00	1,216,000	4.64	26,233,000	1,784,000

<sup>a</sup>1980 Bristol Bay sockeye catch would have been much larger had it not been for a lengthy strike.

<sup>b</sup>The guideline harvest level if chum salmon restrictions were not placed on the fishery. Target percentage is 6.8

<sup>c</sup>1988 through 1990 Bristol Bay catch figures are preliminary.

Table 25. Shumagin Islands June fishery vs. actual Bristol Bay harvest, sockeye salmon, 1975-1991.

Year	Guideline Harvest Level (GHL)	GHL % of Actual Bristol Bay Catch	Shumagin Islands Catch	Shumagin % of Actual Bristol Bay Catch	Actual Bristol Bay Catch	Shumagin GHL if Actual Bristol Bay Catch Was Forecasted
1975	50,000	1.02	49,000	1.00	4,899,000	73,000
1976	75,000	1.33	72,000	1.28	5,619,000	84,000
1977	42,000	0.86	46,000	0.94	4,878,000	73,000
1978	94,000	0.95	68,000	0.68	9,928,000	149,000
1979	200,000	0.93	179,000	0.84	21,429,000	321,000
1980 <sup>a</sup>	555,000	2.34	572,000	2.41	23,762,000	356,000
1981	318,000	1.24	351,000	1.37	25,603,000	384,000
1982	408,000	2.70	451,000	2.99	15,104,000	227,000
1983	324,000	0.87	416,000	1.11	37,372,000	561,000
1984	245,000	0.99	257,000	1.04	24,710,000	371,000
1985	305,000	1.29	367,000	1.55	23,703,000	356,000
1986 <sup>b,c</sup>	200,000	1.27	156,000	0.99	15,776,000	237,000
1987 <sup>b</sup>	140,000	0.87	141,000	0.88	16,069,000	241,000
1988 <sup>b,c</sup>	279,000	1.99	282,000	2.01	14,005,000	210,000
1989 <sup>c</sup>	264,000	0.92	397,000	1.38	28,710,000	431,000
1990 <sup>c</sup>	240,000	0.72	256,000	0.77	33,165,000	497,000
1991	347,000	1.32	333,000	1.27	26,233,000	393,000

<sup>a</sup> 1980 Bristol Bay sockeye catch would have been much larger had it not been for a lengthy strike.

<sup>b</sup> The guideline harvest level if chum salmon restrictions were not placed on the fishery. Target percentage is 1.5.

<sup>c</sup> Bristol Bay catch figures are preliminary.

Table 26. South Unimak-Shumagin Islands June Fishery Regulation History 1962-1991

<u>Year</u>	<u>South Unimak</u>	<u>Shumagin Islands</u>
1962-66	5 days per week	5 days per week
1967-70	7 days per week	7 days per week
1971-72	6:00 A.M. Monday - 6:00 A.M. Saturday	7 days per week
1973	*Four 13 hour fishing periods per week	*Four 13 hour fishing periods per week.
Both fisheries were closed by emergency order during June 25-28 due to indications of the Bristol Bay run being below escapement requirements.		
1974	No fishery	No fishery
1975-83	*6.8% of predicted Bristol Bay catch	1.5% of predicted Bristol Bay catch
1984-89		
No more than 96 hours per 7 day period and no more than 72 hours of consecutive fishing time in each fishery (windows).		
1986	* 6.8% allocation minus June 26-30 segment Windows No fishing before June 11	1.5% allocation minus June 26-30 segment Windows No fishing before June 11
A 400,000 chum salmon ceiling placed on both fisheries combined.		
1987	*Same as during 1984-85 for both fisheries.	
1988-89	*6.8 of predicted Bristol Bay catch Windows	1.5% of predicted Bristol Bay catch Windows

A 500,000 chum salmon ceiling placed on both fisheries combined.

\*Each sockeye allocation is broken down into time period guideline harvest levels.

<u>Dates</u>	<u>South Unimak</u>	<u>Shumagins</u>
June 1 - 11	5%	9%
June 12 - 18	29%	28%
June 19 - 25	51%	41%
June 26 - 30	<u>15%</u>	<u>22%</u>
	100%	100%

-continued-



Table 26 (page 2 of 2)

1990-91 The chum ceiling was increased from 500,000 to 600,000.

The "Window Regulations" implemented in 1984 to limit the amount of fishing time that could be allowed were deleted.

The season was delayed until June 13 and the time period sockeye allocations for both fisheries were changed as follow:

June 13-18	35%
June 19-25	45%
June 26-30	20%

The gear depth for seines was limited to 375 meshes of which mesh size may not exceed 3-1/2 inches except for the first 25 meshes above the lead line which may not exceed 7 inches.

The gear depth on gillnets along the South Peninsula was limited to no more than 90 meshes.

Seine leads may not exceed 150 fathoms for the entire Alaska Peninsula.

Table 26B. South Unimak and Shumagin Islands June fishery number of fishing days and hours, 1976-91.

Year	-----Fishing Time-----			
	South Unimak		Shumagin Islands	
	Days	Hours	Days	Hours
1976	21	504	15	360
1977	11	264	21	504
1978	23	552	23	552
1979	33	792	28	672
1980	26	624	26	624
1981	24	576	20	480
1982	30	720	22	528
1983	11	264	10	228
1984	6	122	6	122
1985	9	144	9	140
1986	8	148	8	160
1987	10	202	5	76
1988	8	110	9	155
1989	6	84	5	72
1990	13	269	10	224
1991	8	156	5	88

Table 27. Salmon gear on south side of Alaska  
Peninsula Area during June, 1976-1991<sup>a</sup>

<u>Year</u>	<u>Purse Seine</u>	<u>Drift Gill Net</u>	<u>Set Gill Net</u>
1976	25	94	16
1977	15	98	16
1978	22	106	17
1979	33	100	22
1980	51	123	24
1981	74	126	32
1982	85	126	33
1983	92	139	41
1984	104	143	52
1985	105	140	51
1986	102	153	50
1987	84	140	62
1988	89	147	63
1989	96	144	65
1990	109	153	65
1991	117	157	57

<sup>a</sup>During the peak of the South Unimak-Shumagin Islands Section June fishery (June 12-25), approximately 30 - 40 seiners fish the Shumagin Islands Section. During the few occasions when South Unimak is open and the Shumagin Islands Section closed, nearly the entire purse seine fleet is at Unimak. Drift net effort declines after June 20 as the fleet begins moving to Port Moller.

Table 28. Units of Gear Used in Alaska Peninsula Area<sup>a</sup>

Table 28. Units of Gear Used in Alaska Peninsula Area							
SEINERS FISHING SOUTH UNIMAK AND SHUMAGINS DURING JUNE		SEINERS <sup>b</sup> FISHING UNALASKA ONLY	FISHED NORTH PENINSULA ONLY DURING JUNE	TOTAL JUNE SEINERS			
1987	84	1	4	89			
1988	89	2	0	91			
1989	96	2	0	98			
1990	109	3	1	113			
1991	117	1	0	118			
DRIFT GILLNETS FISHING SO. UNIMAK & SHUMAGINS DURING JUNE		FISHED NORTH PENINSULA ONLY DURING JUNE (M)	TOTAL AREA M DRIFT GILLNETTERS				
1987	140	15	155				
1988	147	15	162				
1989	144	15	159				
1990	153	8	161				
1991	157	5	162				
INNER PORT HEIDEN SPRING DRIFT GILLNETTERS (AREA T)		INNER PORT HEIDEN ONLY DRIFT GILLNETTERS (AREA T)	TOTAL INNER PORT HEIDEN DRIFT GILLNETTERS				
1987	20	4	24				
1988	18	5	23				
1989	17	3	20				
1990	23	7	30				
1991	17	4	21				
AREA T DRIFT GILLNETTERS FISHING ILNIK AND OUTER PORT HEIDEN SECTIONS		AREA T DRIFT GILLNETTERS FISHING CINDER RIVER SECTION EXCLUSIVE OF ILNIK & PORT HEIDEN					
1987	17		10				
1988	19		19				
1989	29		14				
1990	0		33				
1991	0		48				
TOTAL AREA DRIFT GILLNETTERS (SEASON)							
1987	51						
1988	61						
1989	63						
1990	63						
1991	64						
SET GILLNETTERS (AREA M)							
	Sand Point	South Unimak	North Unimak (only)	South Peninsula (Post June Only)	Nelson <sup>a</sup> Lagoon	Port Moller to Port Heiden (only)	Total Area M
1987	55	9	1	0	25	7	97
1988	52	11	0	0	28	7	98
1989	51	14	0	0	28	7	100
1990	45	14	0	1	28	6	94
1991	67	11	0	0	27	6	111
SET GILLNETTERS (AREA T)							
	Inner Port Heiden		Cinder River		Total Area T		
1987	5		5		10		
1988	6		7		13		
1989	5		14		19		
1990	5		10		15		
1991	4		8		12		

<sup>a</sup>During July and August some gillnet (both drift and set) fishermen who have seine permits hand purse seine pink and chum salmon. Several Sand Point set gillnetters listed are seiners during most of the year. These figures were taken while inseason fish editing and will differ slightly from Tables 27 and 28.

<sup>b</sup>Includes June Unalaska effort.

Table 29. Number of Limited Entry Permits<sup>a</sup> and Fishing Effort<sup>b</sup> in the Alaska Peninsula Area

Year	PURSE SEINE		DRIFT GILLNET			SET GILLNET		
	Area M Permits <sup>a</sup> Available	Area M Permits Fished	Area M Permits Available	Area T Permits <sup>c</sup> Fished	Area M Permits Fished	Area M Permits Available	Area M Permits <sup>c</sup> Fished	Area T Permits Fished
1976	114	(90)	155	(119)	(10)	115	(53)	(6)
1977	113	(87)	156	(114)	(16)	108	(57)	(8)
1978	123	(114)	158	(133)	(27)	113	(61)	(8)
1979	123	(130)	161	(167)	(18)	113	(78)	(13)
1980	126	(125)	163	(157)	(24)	113	(88)	(16)
1981	127	(122)	164	(155)	(13)	115	(88)	(21)
1982	127	(119)	164	(159)	(23)	115	(93)	(18)
1983	127	(121)	166	(159)	(18)	114	(94)	(7)
1984	126	(121)	165	(160)	(44)	113	(104)	(15)
1985	127	(123)	165	(161)	(44)	113	(102)	(18)
1986	125	(121)	165	(164)	(37)	114	(100)	(7)
1987	125	(115)	165	(163)	(48)	114	(108)	(9)
1988	125	(114)	165	(162)	(59)	114	(106)	(14)
1989	125	(119)	165	(163)	(64)	114	(111)	(18)
1990	126	(121)	164	(161)	(63)	114	(114)	(15)
1991	126	(126)	164	(162)	(69)	114	(111)	(12)

<sup>a</sup>Includes both permanent permits and interim use permits. In 1987 there were 6 interim use seine permits, 7 drift gillnet permits and 1 set gillnet permit.

<sup>b</sup>Making at least one delivery during the year.

<sup>c</sup>During a portion of the season, in specific sections, Area T set and drift gillnet fishermen are allowed to fish in the Alaska Peninsula Area, Area M. Therefore the number of permits fished may be higher than the number of Area M permits.

Table 30. Shumagin Islands Section June salmon test fish catch, 1990-91.

Date	Set	----- Number of Adult Salmon -----					Total	Sockeye To Chum Ratio	
		Chinook	Sockeye	Coho	Pink	Chum			
1990									
June 10	Red Bluff	1	20	0	7	5	33	4.0 : 1.0	
	Middle Set	0	10	0	5	1	16	10.0 : 1.0	
	Popof Head	1	31	0	40	10	82	3.1 : 1.0	
	Total	2	61	0	52	16	131	3.8 : 1.0	
	Average	1	20	0	17	5	44	3.8 : 1.0	
1991									
June 9	Total	11	185	0	85	173	454	1.1 : 1.0	
	Average	3	46	0	21	43	114	1.1 : 1.0	
June 10	Total	51	677	0	128	1,729	2,585	0.4 : 1.0	
	Average	13	169	0	32	432	646	0.4 : 1.0	
June 11	Total	26	1,350	0	232	725	2,333	1.9 : 1.0	
	Average	7	338	0	58	181	583	1.9 : 1.0	
June 12	Total	12	1,388	0	222	422	2,044	3.3 : 1.0	
	Average	2	231	0	37	70	341	3.3 : 1.0	
June 13	Total	9	265	0	304	56	634	4.7 : 1.0	
	Average	2	66	0	76	14	159	4.7 : 1.0	

-Continued-

Table 30. (page 2 of 2)

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June 9: exact counts of adult salmon per set were not taken, 4 sets were made (Kelly's Rock, Popof Head, Middle Set, and Andronica Island).

June 10: exact counts of adult salmon per set were not taken, 4 sets were made (Popof Head-2, Middle Set, and Red Bluff).

June 11: exact counts of adult salmon per set were not taken, 4 sets were made (Popof Head-2, Middle Set, and Red Bluff).

June 12: exact counts of adult salmon per set were not taken, 6 sets were made (Popof Head-4, Middle Set, and Red Bluff).

June 13: exact counts of adult salmon per set were not taken, 4 sets were made (Popof Head-2, Middle Set, and Red Bluff).

Table 31. South Peninsula Salmon Runs<sup>a</sup>

<u>Year</u>		<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>
1962	Catch	3,300	420,000	12,500	1,965,400	824,800
	Escapement	0	18,800	-	1,598,800	399,400
	Total	3,300	438,800	-	3,564,200	1,224,200
1963	Catch	1,900	204,400	16,500	2,367,700	461,300
	Escapement	0	23,000	-	1,317,900	446,700
	Total	1,900	227,400	-	3,685,600	908,000
1964	Catch	2,000	370,800	13,600	2,740,300	751,000
	Escapement	0	15,700	-	1,436,400	454,800
	Total	2,000	386,500	-	4,176,700	1,205,800
1965	Catch	2,100	915,700	34,200	2,834,100	556,400
	Escapement	0	12,100	-	1,035,400	228,000
	Total	2,100	927,800	-	3,919,500	784,400
1966	Catch	1,400	606,200	6,300	305,800	494,400
	Escapement	0	17,000	-	719,400	422,000
	Total	1,400	623,200	-	1,025,200	916,400
1967	Catch	1,600	294,100	2,900	78,300	245,200
	Escapement	0	16,200	-	445,500	182,900
	Total	1,600	310,300	-	523,800	428,100
1968	Catch	1,400	699,800	31,100	1,287,100	325,300
	Escapement	0	12,800	-	823,300	279,100
	Total	1,400	712,600	-	2,110,400	604,400
1969	Catch	1,900	912,800	10,900	1,219,100	389,200
	Escapement	0	29,500	-	2,474,900	134,600
	Total	1,900	942,300	-	3,694,000	523,800
1970	Catch	1,800	1,794,600	32,200	1,723,400	981,700
	Escapement	0	16,500	-	1,298,900	280,500
	Total	1,800	1,811,100	-	3,022,300	1,262,200
1971	Catch	2,200	715,500	16,800	1,450,100	1,366,600
	Escapement	0	19,400	-	702,700	343,200
	Total	2,200	734,900	-	2,152,800	1,709,800
1972	Catch	1,300	557,800	8,000	78,000	727,500
	Escapement	0	11,900	-	111,400	254,500
	Total	1,300	569,700	-	189,400	982,000
1973	Catch	400	330,200	6,600	58,300	293,000
	Escapement	0	7,300	-	110,800	505,500
	Total	400	337,500	-	169,100	798,500

continued



Table 31. South Peninsula Salmon Runs<sup>a</sup> (page 2 of 3).

Year		Chinook	Sockeye	Coho	Pink	Chum
1974	Catch	500	204,700	9,400	100,200	71,500
	Escapement	0	95,600	-	284,400	257,300
	Total	500	300,300	-	384,600	328,800
1975	Catch	100	268,400	-	61,700	132,900
	Escapement	0	51,700	-	552,100	193,300
	Total	100	320,100	-	613,800	326,200
1976	Catch	2,100	375,000	200	2,367,000	532,500
	Escapement	0	69,700	-	1,456,400	327,200
	Total	2,100	444,700	-	3,823,400	859,700
1977	Catch	500	311,700	2,100	1,448,600	243,200
	Escapement	0	64,900	-	2,677,800	774,900
	Total	500	376,600	-	4,126,400	1,018,100
1978	Catch	800	579,500	60,700	5,490,000	547,000
	Escapement	0	64,800	-	2,858,700	600,500
	Total	800	644,300	-	8,348,700	1,147,500
1979	Catch	2,100	1,149,700	356,500	6,570,600	483,000
	Escapement	0	53,300	-	2,629,500	411,100
	Total	2,100	1,203,000	-	9,200,100	894,100
1980	Catch	4,800	3,613,000	274,200	7,861,500	1,351,200
	Escapement	0	45,900	-	2,641,600	362,400
	Total	4,800	3,658,900	-	10,503,100	1,713,600
1981	Catch	12,200	2,255,200	162,200	5,035,900	1,770,300
	Escapement	0	45,700	-	2,307,500	381,300
	Total	12,200	2,300,900	-	7,343,400	2,151,600
1982	Catch	9,800	2,346,000	256,000	6,734,900	2,272,500
	Escapement	0	39,200	-	2,293,000	386,900
	Total	9,800	2,385,200	-	9,027,900	2,659,400
1983	Catch	26,900	2,556,600	127,700	2,827,600	1,707,100
	Escapement	0	59,200	-	851,200	446,500
	Total	26,900	2,615,800	-	3,678,800	2,153,600
1984	Catch	9,200	2,318,000	309,100	11,589,300	1,656,500
	Escapement	0	54,800	-	3,811,600	699,700
	Total	9,200	2,372,800	-	15,400,900	2,356,200
1985	Catch	7,900	2,214,600	172,500	4,433,700	1,393,100
	Escapement	0	49,900	-	1,614,100	503,400
	Total	7,900	2,264,500	-	6,047,800	1,896,500

continued

Table 31. South Peninsula Salmon Runs<sup>a</sup> (page 3 of 3).

<u>Year</u>		<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>
1986	Catch	5,600	1,223,000	235,900	4,031,500	1,749,700
	Escapement	0	48,000	-	1,716,700	544,600
	Total	5,600	1,271,000	-	5,748,200	2,294,300
1987	Catch	9,200	1,449,900	224,700	1,208,600	1,376,300
	Escapement	0	44,600	-	1,540,500	620,700
	Total	9,200	1,494,500	-	2,749,100	1,997,000
1988	Catch	11,100	1,472,900	505,500	7,044,800	1,905,200
	Escapement	0	74,100	-	2,839,600	496,400
	Total	11,100	1,547,000	-	9,884,400	2,401,600
1989	Catch	7,000	2,660,700	443,800	7,252,700	994,200
	Escapement	0	78,100	-	1,870,900	310,500
	Total	7,000	2,738,800	-	9,163,600	1,304,700
1990	Catch	16,500	2,386,600	307,200	2,865,900	1,237,800
	Escapement	0	95,300	(75.0-100.0) <sup>b</sup>	1,598,400	354,700
	Total	16,500	2,481,900	367.2-397.2 <sup>b</sup>	4,464,300	1,592,500
1991	Catch	8,000	2,322,400	317,000	10,615,800	1,587,400
	Escapement	0	124,900	-	2,946,800	587,600
	Total	8,000	2,447,300	-	13,562,600	2,175,000

<sup>a</sup>Escapements are indexed totals. Figures in parenthesis are very rough extrapolated estimates.

<sup>b</sup>Numbers of fish in thousands.

Table 32. South Peninsula Pink Salmon Runs

Year		Not including June Migrants			June Migrants		Total June Migrants
		Southeastern and South Central Districts	Southwestern and Unimak Districts	South Peninsula Totals	South Unimak	Shumagins	
1962	Catch	922,100	977,300	1,899,400	42,000	24,000	66,000
	Escapement	826,100	772,700	1,598,800			
	Total	1,748,200	1,750,000	3,498,200			
1963	Catch	1,733,900	590,800	2,324,700	14,000	29,000	43,000
	Escapement	886,500	431,400	1,317,900			
	Total	2,620,400	1,022,200	3,642,200			
1964	Catch	1,514,600	1,190,700	2,705,300	18,000	17,000	35,000
	Escapement	902,400	534,000	1,436,700			
	Total	2,417,000	1,724,700	4,141,700			
1965	Catch	2,331,400	474,700	2,806,100	43,000	35,000	78,000
	Escapement	789,900	245,500	1,035,400			
	Total	3,121,300	720,200	3,841,500			
1966	Catch	220,300	68,500	288,800	15,000	2,000	17,000
	Escapement	627,400	92,000	719,400			
	Total	847,700	160,500	1,008,200			
1967	Catch	53,100	4,200	57,300	11,000	10,000	21,000
	Escapement	327,300	118,200	445,500			
	Total	380,400	122,400	502,800			
1968	Catch	863,300	277,800	1,141,100	34,000	112,000	146,000
	Escapement	528,100	295,200	823,300			
	Total	1,391,400	573,000	1,964,400			
1969	Catch	862,800	265,300	1,128,100	68,000	23,000	91,000
	Escapement	1,906,200	568,700	2,474,900			
	Total	2,769,000	834,000	3,603,000			
1970	Catch	1,366,100	250,300	1,616,400	83,000	24,000	107,000
	Escapement	1,007,900	291,000	1,298,900			
	Total	2,374,000	541,300	2,915,300			
1971	Catch	1,212,100	214,000	1,426,100	15,000	9,000	24,000
	Escapement	488,000	214,700	702,700			
	Total	1,700,100	428,700	2,128,800			
1972	Catch	51,200	8,800	60,000	12,000	6,000	18,000
	Escapement	81,800	29,600	111,400			
	Total	133,000	38,400	171,400			
1973	Catch	35,100	1,200	36,300	12,000	10,000	22,000
	Escapement	85,700	25,100	110,800			
	Total	120,800	26,300	147,100			
1974	Catch	95,500	4,700	100,200	0	0	0
	Escapement	238,600	45,800	284,400			
	Total	334,100	50,500	384,600			
1975	Catch	30,400	26,300	56,700	3,000	2,000	5,000
	Escapement	357,800	194,300	552,100			
	Total	388,200	220,600	608,800			
1976	Catch	2,035,900	307,100	2,343,000	18,000	6,000	24,000
	Escapement	1,084,000	372,400	1,456,400			
	Total	3,119,900	679,500	3,799,400			
1977	Catch	1,163,400	280,200	1,443,600	3,000	2,000	5,000
	Escapement	2,168,500	509,300	2,677,800			
	Total	3,331,900	789,500	4,121,400			

-continued-

Table 32. South Peninsula Pink Salmon Runs (page 2 of 2)

Year		Not including June Migrants			June Migrants		Total June Migrants
		Southeastern and South Central Districts	Southwestern and Unimak Districts	South Peninsula Totals	South Unimak	Shumagins	
1978	Catch	4,067,300	1,332,700	5,400,000	47,000	43,000	90,000
	Escapement	1,966,300	892,400	2,858,700			
	Total	6,033,600	2,225,100	8,258,700			
1979	Catch	4,845,000	1,562,600	6,407,600	57,000	106,000	163,000
	Escapement	2,125,100	504,400	2,629,500			
	Total	6,970,100	2,067,000	9,037,100			
1980	Catch	2,439,600	3,815,600	6,255,200	1,141,000	466,000	1,607,000
	Escapement	1,410,400	1,231,200	2,641,600			
	Total	3,850,000	5,046,800	8,896,800			
1981	Catch	4,196,400	378,500	4,574,900	332,000	129,000	461,000
	Escapement	1,875,000	431,800	2,306,800			
	Total	6,071,400	810,300	6,881,700			
1982	Catch	4,104,900	906,100	5,011,000	1,037,000	687,000	1,724,000
	Escapement	1,533,200	759,800	2,293,000			
	Total	5,638,100	1,665,900	7,304,000			
1983	Catch	2,245,800	526,800	2,772,600	40,000	15,000	55,000
	Escapement	639,200	212,000	851,200			
	Total	2,885,000	738,800	3,623,800			
1984	Catch	6,533,100	4,136,300	10,669,400	490,000	449,000	939,000
	Escapement	2,526,700	1,824,900	3,811,600			
	Total	9,059,800	5,421,200	14,481,000			
1985	Catch	3,324,800	999,900	4,324,700	72,000	37,000	109,000
	Escapement	1,229,300	384,500	1,613,800			
	Total	4,554,100	1,384,400	5,938,500			
1986	Catch	3,066,900	673,500	3,740,400	150,000	141,000	291,000
	Escapement	1,185,500	531,200	1,716,700			
	Total	4,252,400	1,204,700	5,457,100			
1987	Catch	1,143,400	48,100	1,191,500	11,000	6,000	17,000
	Escapement	1,304,400	236,100	1,540,500			
	Total	2,447,800	284,200	2,732,000			
1988	Catch	4,662,300	2,164,100	6,826,400	87,000	132,000	219,000
	Escapement	1,636,500	1,203,100	2,839,600			
	Total	6,298,800	3,367,200	9,666,000			
1989	Catch	5,582,300	1,511,300	7,093,600	154,000	45,000	199,000
	Escapement	1,179,200	691,600	1,870,800			
	Total	6,761,500	2,202,900	8,964,400			
1990	Catch	1,738,600	612,300	2,350,900	444,000	71,000	515,000
	Escapement	1,018,200	580,200	1,598,400			
	Total	2,756,800	1,192,500	3,949,300			
1991	Catch	7,549,900	2,446,800	9,996,700	501,000	118,000	619,000
	Escapement	2,268,400	678,400	2,946,800			
	Total	9,818,300	3,125,200	12,943,500			

Table 33. South Peninsula Chum Salmon Runs (page 1 of 2)

Year		Not including June Migrants		South Peninsula Totals	June Migrants		Total June Migrants
		Southeastern and South Central Districts	Southwestern and Unimak Districts		South Unimak	Shumagins	
1962	Catch	409,500	155,300	564,800	199,000	61,000	260,000
	Escapement	238,600	160,800	399,400			
	Total	648,100	316,100	964,200			
1963	Catch	278,000	80,300	358,300	67,000	36,000	103,000
	Escapement	263,000	183,700	446,700			
	Total	541,000	264,000	805,000			
1964	Catch	378,800	153,300	532,100	153,000	67,000	220,000
	Escapement	160,800	294,000	454,800			
	Total	539,600	447,300	986,900			
1965	Catch	221,700	150,700	372,400	139,000	45,000	184,000
	Escapement	203,300	24,200	228,000			
	Total	425,000	175,400	600,400			
1966	Catch	221,400	36,000	257,400	220,000	17,000	237,000
	Escapement	354,800	67,200	422,000			
	Total	576,800	103,200	679,400			
1967	Catch	118,700	4,500	123,200	71,000	51,000	122,000
	Escapement	132,800	50,100	182,900			
	Total	251,500	54,600	306,100			
1968	Catch	121,400	47,600	169,000	105,000	51,000	156,000
	Escapement	191,700	87,400	279,100			
	Total	313,100	135,000	448,100			
1969	Catch	95,100	43,300	138,400	238,000	13,000	251,000
	Escapement	96,900	37,700	134,600			
	Total	192,000	81,000	273,000			
1970	Catch	482,400	87,200	569,600	363,000	49,000	412,000
	Escapement	171,700	108,800	280,500			
	Total	664,100	196,000	850,100			
1971	Catch	637,100	117,500	754,600	497,000	115,000	612,000
	Escapement	199,100	144,100	343,200			
	Total	836,200	261,600	1,097,800			
1972	Catch	150,600	55,900	206,500	413,000	108,000	521,000
	Escapement	145,000	109,500	254,500			
	Total	295,600	165,400	461,000			
1973	Catch	67,100	12,100	79,200	178,000	36,000	214,000
	Escapement	130,900	81,600	212,500			
	Total	198,000	93,700	291,700			
1974	Catch	56,600	15,300	71,900	0	0	0
	Escapement	169,800	87,500	257,300			
	Total	226,400	102,800	329,200			
1975	Catch	29,900	4,000	33,900	64,000	35,000	99,000
	Escapement	160,200	33,100	193,300			
	Total	190,100	37,100	227,200			
1976	Catch	109,400	25,100	134,500	326,000	72,000	298,000
	Escapement	225,300	101,900	327,200			
	Total	334,700	127,000	461,700			
1977	Catch	109,400	18,800	128,200	93,000	22,000	115,000
	Escapement	500,900	274,000	774,900			
	Total	610,300	292,800	903,100			

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Table 33. South Peninsula Chum Salmon runs (page 2 of 2)

Year		Not including June Migrants		South Peninsula Totals	June Migrants		Total June Migrants
		Southeastern and South Central Districts	Southwestern and Unimak Districts		South Unimak	Shumagins	
1978	Catch	341,600	139,800	481,400	47,000	18,000	65,000
	Escapement	386,200	214,300	600,500			
	Total	727,800	254,100	1,081,900			
1979	Catch	280,400	97,600	378,000	64,000	41,000	105,000
	Escapement	302,700	108,400	411,100			
	Total	583,100	206,000	789,100			
1980	Catch	654,200	169,100	823,300	457,000	71,000	528,000
	Escapement	241,600	120,800	362,400			
	Total	895,800	289,900	1,185,700			
1981	Catch	966,100	229,200	1,195,300	521,000	54,000	575,000
	Escapement	234,500	146,800	381,300			
	Total	1,200,600	376,000	1,576,600			
1982	Catch	922,900	253,800	1,176,700	935,000	160,000	1,095,000
	Escapement	203,000	183,900	386,900			
	Total	1,125,900	437,700	1,536,600			
1983	Catch	600,300	322,600	922,900	615,000	169,000	784,000
	Escapement	328,900	117,600	446,500			
	Total	929,200	440,200	1,369,400			
1984	Catch	832,900	486,500	1,319,400	228,000	109,000	337,000
	Escapement	446,000	253,700	699,700			
	Total	1,278,900	740,200	2,019,100			
1985	Catch	539,200	375,700	914,900	345,000	133,000	478,000
	Escapement	284,700	218,800	503,500			
	Total	823,900	594,500	1,418,400			
1986	Catch	981,200	417,400	1,398,600	252,000	99,000	351,000
	Escapement	239,600	305,000	544,600			
	Total	1,220,800	722,400	1,943,200			
1987	Catch	753,200	180,000	933,200	406,000	37,000	443,000
	Escapement	329,200	291,500	620,700			
	Total	1,082,400	471,500	1,553,900			
1988	Catch	826,200	552,300	1,378,500	465,000	62,000	527,000
	Escapement	269,100	227,300	496,400			
	Total	1,095,300	779,600	1,874,900			
1989	Catch	420,900	117,300	538,200	408,000	48,000	456,000
	Escapement	189,200	121,300	310,500			
	Total	610,100	238,600	848,700			
1990	Catch	563,700	155,400	719,100	455,000	64,000	519,000
	Escapement	210,900	143,800	354,700			
	Total	774,600	299,200	1,073,800			
1991	Catch	578,000	238,000	816,000	669,000	103,000	772,000
	Escapement	345,400	242,200	587,600			
	Total	923,400	480,200	1,403,600			

Table 34. North Peninsula Salmon Runs. (Page 1 of 3)

Year		Chinook	Sockeye	Coho	Pink	Chum
1962	Catch	5,400	249,700	35,200	31,200	34,900
	Escapement	4,400	351,200		4,000	150,900
	Total	9,800	600,900		35,200	185,800
1963	Catch	3,600	225,200	40,500	6,900	49,900
	Escapement	6,200	351,000		4,400	203,200
	Total	9,800	576,200		11,300	253,100
1964	Catch	3,600	250,800	36,600	6,800	139,000
	Escapement	25,900	419,900		(15,100)	156,100
	Total	29,500	670,700		(21,900)	295,100
1965	Catch	6,100	199,500	34,500	2,100	69,700
	Escapement	22,100	238,400		900	49,300
	Total	28,200	437,900		3,000	119,000
1966	Catch	5,600	245,300	37,300	16,000	82,800
	Escapement	8,200	283,300		2,000	149,000
	Total	13,800	528,600		18,000	232,300
1967	Catch	5,500	224,700	46,800	700	41,300
	Escapement	12,200	299,700		700	122,600
	Total	17,700	524,400		1,400	163,900
1968	Catch	4,500	237,100	64,900	200	73,500
	Escapement	15,800	251,300		26,500	250,800
	Total	20,300	488,400		26,700	324,300
1969	Catch	4,800	321,300	49,100	100	28,100
	Escapement	19,500	575,000		4,400	146,800
	Total	24,300	896,300		4,500	174,900
1970	Catch	3,200	213,000	26,400	7,800	50,200
	Escapement	8,300	451,500		11,100	169,800
	Total	11,500	664,500		18,900	220,000
1971	Catch	2,200	354,200	16,800	300	64,200
	Escapement	5,200	435,100		8,600	109,400
	Total	7,400	789,300		8,900	173,600
1972	Catch	1,800	179,500	8,000	0	84,700
	Escapement	5,000	190,200		1,300	124,000
	Total	6,800	369,700		1,300	208,700

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Table 34. North Peninsula Salmon Runs. (Page 2 of 3)

Year		Chinook	Sockeye	Coho	Pink	Chum
1973	Catch	4,400	171,800	6,600	300	155,700
	Escapement	4,300	180,200		(200)	122,400
	Total	8,700	352,000		(500)	278,100
1974	Catch	5,100	247,900	24,000	10,500	35,300
	Escapement	3,000	332,800		(23,000)	105,100
	Total	8,100	580,700		(33,500)	140,400
1975	Catch	2,100	233,500	28,200	300	8,700
	Escapement	4,600	516,800		600	109,200
	Total	6,700	750,300		900	117,900
1976	Catch	4,900	641,100	26,000	600	73,600
	Escapement	6,000	532,600		37,300	293,400
	Total	10,900	1,173,700		37,900	367,000
1977	Catch	5,500	471,100	34,100	900	129,100
	Escapement	7,100	541,100		8,500	681,200
	Total	12,600	1,012,200		9,400	810,300
1978	Catch	14,200	896,200	63,300	466,600	163,400
	Escapement	13,700	1,213,500		96,800	310,500
	Total	27,900	2,109,700		563,400	473,900
1979	Catch	17,100	1,979,500	112,300	5,000	65,700
	Escapement	15,800	1,574,000		9,300	305,300
	Total	32,900	3,553,500		14,300	371,000
1980	Catch	16,800	1,397,100	127,900	301,700	700,200
	Escapement	11,000	1,387,600		103,600	769,500
	Total	27,800	2,784,700		405,300	1,469,700
1981	Catch	18,300	1,844,900	155,400	11,200	706,800
	Escapement	12,400	1,347,900		6,100	535,200
	Total	30,700	3,192,800		17,300	1,242,000
1982	Catch	30,100	1,435,300	238,000	12,300	331,100
	Escapement	20,000	718,400		51,700	457,600
	Total	50,100	2,153,700		64,000	788,700
1983	Catch	29,500	2,093,400	75,100	3,400	348,700
	Escapement	25,700	580,300		4,000	392,600
	Total	55,200	2,673,700		7,400	741,300
1984	Catch	23,000	1,734,900	198,500	27,400	796,700
	Escapement	17,700	826,000		56,600	870,200
	Total	40,700	2,560,900		84,000	1,666,900

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Table 34. North Peninsula Salmon Runs. (Page 3 of 3)

Year		Chinook	Sockeye	Coho	Pink	Chum
1985	Catch	23,500	2,600,500	167,300	3,100	671,100
	Escapement	12,900	898,100		1,400	344,200
	Total	36,400	3,498,600		4,500	1,015,300
1986	Catch	11,700	2,463,700	164,100	22,600	271,200
	Escapement	8,700	580,300		13,300	243,600
	Total	20,400	3,044,000		35,900	514,800
1987	Catch	14,200	1,209,400	171,800	3,500	368,700
	Escapement	10,700	556,000		100	510,900
	Total	24,900	1,765,400		3,600	879,600
1988	Catch	16,800	1,528,100	234,000	65,200	393,500
	Escapement	11,700	614,900	(200-300) <sup>a</sup>	43,500	500,300
	Total	28,500	2,143,000	(434-534) <sup>b</sup>	108,700	893,800
1989	Catch	10,900	1,718,800	227,600	4,100	157,100
	Escapement	5,600	814,400	(150-250) <sup>b</sup>	61,900	212,300
	Total	16,500	2,533,200	377.6-477.6 <sup>b</sup>	6,000	369,400
1990	Catch	12,300	2,415,900	192,800	517,700	125,800
	Escapement	7,100	1,032,200	(140-175)	132,200	226,400
	Total	19,400	3,448,100	332.8-367.8	649,900	352,200
1991	Catch	9,400	2,392,100	217,400	4,200	191,300
	Escapement	9,600	1,317,300		6,300	303,300
	Total	19,000	3,709,400		10,500	494,600

<sup>a</sup>Escapements are indexed totals. Figure in parenthesis are very rough extrapolated estimates.

<sup>b</sup>Numbers of fish in thousands.

Table 35. Northern District Chinook Salmon Runs<sup>a</sup> (Page 1 of 2)

Year	Cinder River	Port Heiden	Three Hills & Il'nik	Bear River	Herendeen- Moller Bay	Nelson Lagoon	Caribou Flats & Black Hills	Northern District Totals
1962 Catch	0	400	0	500	700	3,700	0	5,300
Escapement	0	(1,100)	0	500	0	2,700	(100)	4,400
Total	0	(1,500)	0	1,000	700	6,400	(100)	9,700
1963 Catch	0	0	0	600	200	2,500	0	3,300
Escapement	0	(100)	0	200	0	4,000	(1,900)	6,200
Total	0	(100)	0	800	200	6,500	(1,900)	9,500
1964 Catch	0	0	100	300	0	3,300	0	3,700
Escapement	5,800	4,200	500	3,000	0	8,400	4,000	25,900
Total	5,800	4,200	600	3,300	0	11,700	4,000	29,600
1965 Catch	0	1,900	300	100	0	4,000	0	6,300
Escapement	700	1,000	0	5,400	0	11,900	3,000	22,000
Total	700	2,900	300	5,500	0	15,900	3,000	28,300
1966 Catch	0	700	0	100	0	2,400	0	3,200
Escapement	0	(1,300)	0	(300)	0	4,700	1,900	8,200
Total	0	(2,000)	0	(400)	0	7,100	1,900	11,400
1967 Catch	0	1,400	0	100	400	3,600	0	5,500
Escapement	(800)	500	300	3,000	0	5,100	1,300	11,000
Total	(800)	1,900	300	3,100	400	8,700	1,300	16,500
1968 Catch	0	1,000	100	300	1,300	2,800	0	5,500
Escapement	300	(1,100)	0	2,600	0	7,300	2,700	14,000
Total	300	(2,100)	100	2,900	1,300	10,100	2,700	19,500
1969 Catch	0	1,400	0	500	500	2,500	0	4,900
Escapement	800	(1,100)	0	1,000	0	8,100	1,600	12,600
Total	800	(2,500)	0	1,500	500	10,600	1,600	17,500
1970 Catch	0	0	0	200	400	2,600	0	3,200
Escapement	200	300	300	1,000	0	2,900	2,000	6,700
Total	200	300	300	1,200	400	5,500	2,000	9,900
1971 Catch	0	0	100	300	400	1,400	0	2,200
Escapement	100	100	200	800	0	2,300	(1,500)	5,000
Total	100	100	300	1,100	400	3,700	(1,500)	7,200
1972 Catch	0	0	100	200	200	1,300	0	1,800
Escapement	700	1,600	0	100	0	1,400	1,000	4,800
Total	700	1,600	100	300	200	2,700	1,000	6,600
1973 Catch	0	1,600	0	700	300	1,500	0	4,100
Escapement	600	600	0	100	0	1,500	800	3,600
Total	600	2,200	0	800	300	3,000	800	7,700
1974 Catch	0	2,500	0	200	200	2,100	0	5,000
Escapement	500	700	0	300	0	1,100	400	3,000
Total	500	3,200	0	500	200	3,200	400	8,000
1975 Catch	0	400	0	300	200	1,200	0	2,100
Escapement	100	900	0	700	0	2,500	400	4,600
Total	100	1,300	0	1,000	200	3,700	400	6,700
1976 Catch	0	1,500	100	500	600	2,200	0	4,900
Escapement	1,600	200	0	500	0	3,300	400	6,000
Total	1,600	1,700	100	1,000	600	5,500	400	10,900

continued

Table 35. Northern District Chinook Salmon Runs<sup>a</sup> (Page 2 of 2)

Year	Cinder River	Port Heiden	Three Hills & Ilnik	Bear River	Herendeen-Moller Bay	Nelson Lagoon	Caribou Flats & Black Hills	Northern District Totals
1977 Catch	0	2,500	100	700	500	1,700	0	5,500
Escapement	100	700	0	0	0	5,600	700	7,100
Total	100	3,200	100	700	500	7,300	700	12,600
1978 Catch	0	9,500	0	600	700	3,400	0	14,200
Escapement	1,100	4,200	0	(200)	0	4,200	4,000	13,700
Total	1,100	13,700	0	(800)	700	7,600	4,000	27,900
1979 Catch	0	9,700	0	1,400	500	5,400	0	17,000
Escapement	300	(3,200)	0	0	0	11,000	1,500	15,800
Total	300	(12,900)	0	1,400	500	16,400	1,500	32,800
1980 Catch	0	5,400	100	1,700	900	8,700	0	16,800
Escapement	(3,000)	(1,600)	0	100	0	5,500	800	(11,000)
Total	(3,000)	(7,000)	100	1,800	900	14,200	800	(27,800)
1981 Catch	0	6,100	0	1,100	100	11,000	0	18,300
Escapement	(3,000)	(1,000)	0	2,300	0	5,200	900	(12,400)
Total	(3,000)	(7,100)	0	3,400	100	16,200	900	(30,700)
1982 Catch	0	11,000	900	2,900	600	13,500	1,200	30,100
Escapement	(2,500)	(7,500)	0	900	0	7,000	2,100	20,000
Total	(2,500)	(18,500)	900	3,800	600	20,500	3,300	50,100
1983 Catch	0	6,800	900	8,600	700	12,100	400	29,500
Escapement	7,200	900	0	(1,500)	0	12,500	3,600	25,700
Total	7,200	7,700	900	(10,100)	700	24,600	4,000	55,200
1984 Catch	0	6,400	1,300	6,000	600	7,800	800	22,900
Escapement	400	7,400	0	600	0	6,300	3,000	17,700
Total	400	13,800	1,300	6,600	600	14,100	3,800	40,600
1985 Catch	0	4,400	1,700	4,800	1,800	10,900	0	23,600
Escapement	700	4,700	0	1,200	0	3,200	3,200	13,000
Total	700	9,100	1,700	6,000	1,800	14,100	3,200	36,600
1986 Catch	0	1,800	1,500	2,900	400	4,800	200	11,600
Escapement	1,700	2,400	0	800	0	1,800	2,100	8,800
Total	1,700	4,200	1,500	3,700	400	6,600	2,300	20,400
1987 Catch	0	3,200	900	3,800	300	5,800	100	14,100
Escapement	900	1,400	0	700	0	4,100	3,600	10,700
Total	900	4,600	900	4,500	300	9,900	3,700	24,800
1988 Catch	0	5,800	800	3,500	200	6,500	0	16,800
Escapement	400	2,200	200	1,200	0	3,300	3,300	10,600
Total	400	8,000	1,000	4,700	200	9,800	3,300	27,400
1989 Catch	100	2,900	500	2,200	300	3,800	1,000	10,800
Escapement	200	800	0	900	0	3,100	600	5,600
Total	300	3,700	500	3,100	300	6,900	1,600	16,400
1990 Catch	100	4,700	500	2,100	100	3,600	1,100	12,200
Escapement	1,600	800	0	1,400	0	2,300	1,000	7,100
Total	1,700	5,500	500	3,500	100	5,900	2,100	19,300
1991 Catch	0	3,100	300	1,600	200	3,500	600	9,300
Escapement	600	900	0	700	0	6,800	500	9,500
Total	600	4,000	300	2,300	200	10,300	1,100	18,800

<sup>a</sup>Figures in parenthesis are extrapolated estimates. Escapements are indexed totals.

Table 36. Northwestern District Sockeye Salmon Runs<sup>a</sup>

Page 1 of 3

Year		Izembek - Moffet Bay	Bechevin, Swanson Lagoon & Urilia Bays	Northwestern District Total
1962	Catch	4,700	4,100	8,800
	Escapement	27,000	(24,000)	(51,000)
	Total	31,700	28,100	(59,800)
1963	Catch	1,700	5,200	6,900
	Escapement	40,000	14,000	54,000
	Total	41,700	19,200	60,900
1964	Catch	4,700	10,300	15,000
	Escapement	50,000	(20,000)	70,000
	Total	54,700	30,300	85,000
1965	Catch	400	14,100	14,500
	Escapement	7,000	6,900	13,900
	Total	7,400	21,000	28,400
1966	Catch	0	16,300	16,300
	Escapement	7,500	12,400	19,900
	Total	7,500	28,700	36,200
1967	Catch	8,100	5,300	13,400
	Escapement	9,000	5,800	14,800
	Total	17,100	11,100	28,200
1968	Catch	11,100	4,600	15,700
	Escapement	10,000	7,800	17,800
	Total	21,100	12,400	33,500
1969	Catch	6,100	3,500	9,600
	Escapement	14,000	39,500	53,500
	Total	20,100	43,000	63,100
1970	Catch	3,100	700	3,800
	Escapement	7,000	(35,000)	(42,000)
	Total	10,100	(35,700)	(45,800)
1971	Catch	6,900	2,400	9,300
	Escapement	4,000	30,000	34,000
	Total	10,900	32,400	43,300
1972	Catch	800	6,200	7,000
	Escapement	5,000	4,800	9,800
	Total	5,800	11,000	16,800

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Table 36. (Page 2 of 3)

Year		Izembek - Moffet Bay	Bechevin, Swanson Lagoon & Urilia Bays	Northwestern District Total
1973	Catch	1,200	2,600	3,800
	Escapement	2,000	5,000	7,000
	Total	3,200	7,600	10,800
1974	Catch	4,700	3,600	8,300
	Escapement	4,000	3,300	7,300
	Total	8,700	6,900	15,600
1975	Catch	1,500	1,500	3,000
	Escapement	7,000	12,300	19,300
	Total	8,500	13,800	22,300
1976	Catch	19,000	1,700	20,700
	Escapement	14,000	21,500	35,500
	Total	33,000	23,200	56,200
1977	Catch	3,100	31,500	34,600
	Escapement	26,500	28,600	55,100
	Total	29,600	60,100	89,700
1978	Catch	15,600	24,500	40,100
	Escapement	17,000	28,000	45,000
	Total	32,600	52,500	85,100
1979	Catch	10,800	63,100	73,900
	Escapement	9,000	33,700	42,700
	Total	19,800	96,800	116,600
1980	Catch	34,200	15,200	49,400
	Escapement	11,500	90,100	101,600
	Total	45,700	105,300	151,000
1981	Catch	30,900	20,100	51,000
	Escapement	12,000	60,700	72,700
	Total	42,900	80,800	123,700
1982	Catch	24,500	9,300	33,800
	Escapement	21,500	29,300	50,800
	Total	46,000	38,600	84,600
1983	Catch	15,200	14,300	29,500
	Escapement	18,500	14,200	32,700
	Total	33,700	28,500	62,200

-continued-

Table 36. (Page 3 of 3)

Year		Izembek - Moffet Bay	Bechevin, Swanson Lagoon & Urilia Bays	Northwestern District Total
1984	Catch	4,700	197,000	201,700
	Escapement	19,100	70,300	89,400
	Total	23,800	267,300	291,100
1985	Catch	6,200	77,400	83,600
	Escapement	17,200	29,500	46,700
	Total	23,400	106,900	130,300
1986	Catch	19,100	139,200	158,300
	Escapement	15,700	45,700	61,400
	Total	34,800	184,900	219,700
1987	Catch	6,500	137,900	144,400
	Escapement	13,600	36,300	49,900
	Total	20,100	174,200	194,300
1988	Catch	11,500	67,000	78,500
	Escapement	17,300	35,600	52,900
	Total	28,800	102,600	131,400
1989	Catch	8,600	44,000	52,600
	Escapement	22,500	58,100	80,600
	Total	31,100	102,100	133,200
1990	Catch	39,400	119,500	158,900
	Escapement	33,700	83,100	116,800
	Total	73,100	202,600	275,700
1991	Catch	24,500	156,700	181,200
	Escapement	51,600	86,700	138,300
	Total	76,100	243,400	138,300

Figures in parenthesis are extrapolated estimates. Escapements are indexed totals.

Table 37. Northern District sockeye salmon runs. (Page 1 of 2)

Year	Cinder River	Port Heiden	Three Hills & Ilrik	Bear River	Herendeen- Moller Bay	Nelson Lagoon	Caribou Flats & Black Hills	Northern District Totals
1962 Catch	900	17,800	9,700	142,900	0	69,600	0	240,900
Escapement	5,000	(19,000)	5,900	215,000	100	54,200	1,000	300,200
Total	5,900	(36,800)	15,600	357,900	100	123,800	1,000	541,100
1963 Catch	0	0	26,600	120,000	0	71,500	0	218,100
Escapement	1,400	(14,200)	10,400	238,600	100	31,000	(1,300)	297,000
Total	1,400	(14,200)	37,000	358,600	100	102,500	(1,300)	515,100
1964 Catch	0	6,300	33,300	107,500	0	88,700	0	235,800
Escapement	1,500	10,000	(6,500)	250,200	200	80,000	1,500	349,900
Total	1,500	16,300	(39,800)	357,700	200	168,700	1,500	585,700
1965 Catch	0	9,700	58,400	62,400	100	53,800	0	184,400
Escapement	7,500	30,000	(12,500)	137,000	0	37,000	500	224,500
Total	7,500	39,700	(70,900)	199,400	100	90,800	500	408,900
1966 Catch	0	8,000	11,000	152,600	0	60,000	0	231,600
Escapement	3,000	(11,700)	24,300	185,000	600	36,500	2,300	263,400
Total	3,000	(19,700)	35,300	337,600	600	96,500	2,300	495,000
1967 Catch	0	3,100	0	156,100	12,500	40,200	0	211,900
Escapement	(3,800)	(12,000)	26,400	200,000	200	42,000	(500)	284,900
Total	(3,800)	(15,100)	26,400	356,100	12,700	82,200	(500)	496,800
1968 Catch	0	0	78,600	90,500	3,400	51,100	0	223,600
Escapement	4,100	(15,000)	(15,000)	166,000	400	31,000	(2,000)	233,500
Total	4,100	(15,000)	(93,600)	256,500	3,800	82,100	(2,000)	457,100
1969 Catch	0	5,200	24,000	205,500	4,400	72,800	0	311,900
Escapement	(3,800)	(15,000)	(15,600)	406,000	100	78,500	(2,500)	521,500
Total	(3,800)	(20,200)	(39,600)	611,500	4,500	151,300	(2,500)	833,400
1970 Catch	0	0	44,800	110,000	1,700	52,700	0	209,200
Escapement	1,500	14,100	16,100	294,000	0	82,400	1,400	409,500
Total	1,500	14,100	60,900	404,000	1,700	135,100	1,400	618,700
1971 Catch	0	0	57,100	238,600	1,700	47,500	0	344,900
Escapement	2,000	30,800	26,500	281,000	200	60,100	500	401,100
Total	2,000	30,800	83,600	519,600	1,900	107,600	500	746,000
1972 Catch	0	0	12,000	136,200	1,100	23,200	0	172,500
Escapement	400	3,500	13,100	135,400	0	28,000	0	180,400
Total	400	3,500	25,100	271,600	1,100	51,200	0	352,900
1973 Catch	0	1,500	21,500	117,300	4,200	23,900	0	168,400
Escapement	1,200	7,200	16,000	130,100	0	18,700	0	173,200
Total	1,200	8,700	37,500	247,400	4,200	42,600	0	341,600
1974 Catch	0	2,500	47,000	140,900	7,700	25,200	0	223,300
Escapement	1,300	1,400	14,600	266,500	0	39,900	1,800	325,500
Total	1,300	3,900	61,600	407,400	7,700	65,100	1,800	548,800
1975 Catch	0	600	8,700	166,000	3,700	51,500	0	230,500
Escapement	900	5,100	40,800	310,000	100	138,600	2,000	497,500
Total	900	5,700	49,500	476,000	3,800	190,100	2,000	728,000
1976 Catch	0	5,000	219,700	310,900	9,900	74,900	0	620,400
Escapement	6,300	30,300	15,700	328,000	500	108,900	7,400	497,100
Total	6,300	35,300	235,400	638,900	10,400	183,800	7,400	1,117,500

continued

Table 37. Northern District sockeye salmon runs. (page 2 of 2)

Year	Cinder River	Port Heiden	Three Hills & Ilnik	Bear River	Herendeen-Moller Bay	Nelson Lagoon	Caribou Flats & Black Hills	Northern District Totals
1977 Catch	0	3,400	97,000	268,700	11,000	56,400	0	436,500
Escapement	3,900	23,600	20,700	265,200	13,500	155,000	4,100	486,500
Total	3,900	27,000	117,700	533,900	24,500	211,400	4,100	922,500
1978 Catch	0	800	32,200	556,400	53,700	213,400	0	856,500
Escapement	3,800	18,800	21,200	814,000	4,900	304,300	1,500	1,168,500
Total	3,800	19,600	53,400	1,370,400	58,600	517,700	1,500	2,025,000
1979 Catch	100	36,900	194,400	1,320,900	32,100	320,900	0	1,905,300
Escapement	6,000	(46,700)	97,500	1,013,000	5,000	360,100	3,000	1,531,300
Total	6,100	(83,600)	291,900	2,333,900	37,100	681,000	3,000	3,436,600
1980 Catch	0	24,600	252,200	741,900	10,500	318,500	0	1,347,700
Escapement	30,000	(47,000)	(100,000)	751,000	1,500	352,600	3,900	1,286,000
Total	30,000	(71,600)	(352,200)	1,492,900	12,000	671,100	3,900	2,633,700
1981 Catch	0	3,800	68,900	1,327,800	18,600	374,700	0	1,793,800
Escapement	100,000	(26,600)	(151,000)	741,500	600	251,000	(4,000)	1,274,700
Total	100,000	(30,400)	(219,000)	2,069,300	19,200	625,700	(4,000)	3,068,500
1982 Catch	0	8,800	142,500	1,009,300	11,300	229,200	400	1,401,500
Escapement	(13,000)	(62,000)	(43,000)	361,300	500	179,600	6,000	665,400
Total	(13,000)	(70,800)	(185,500)	1,370,600	11,800	408,800	6,400	2,066,900
1983 Catch	100	100	729,600	1,126,200	15,000	192,900	0	2,063,900
Escapement	9,000	8,600	40,100	358,000	500	128,800	2,600	547,600
Total	9,100	8,700	769,700	1,484,200	15,500	321,700	2,600	2,611,500
1984 Catch	0	1,700	743,700	637,400	31,400	118,800	0	1,533,000
Escapement	16,000	31,100	22,300	414,000	700	251,000	600	735,700
Catch	16,000	32,800	766,000	1,051,400	32,100	369,800	600	2,268,700
1985 Catch	300	5,100	978,200	822,500	4,500	706,300	0	2,516,900
Escapement	12,600	45,500	22,700	451,500	700	314,800	3,700	851,500
Total	12,900	50,600	1,000,900	1,274,000	5,200	1,021,100	3,700	3,368,400
1986 Catch	700	38,000	1,148,800	938,200	1,300	178,400	0	2,305,400
Escapement	25,700	26,400	66,900	279,400	300	117,900	2,300	518,900
Total	26,400	64,400	1,215,700	1,217,600	1,600	296,300	2,300	2,824,300
1987 Catch	200	2,300	719,300	214,000	700	128,500	100	1,065,100
Escapement	15,300	28,300	30,700	266,700	700	155,700	8,700	506,100
Total	15,500	30,600	750,000	480,700	1,400	284,200	8,800	1,571,200
1988 Catch	0	10,600	753,600	495,000	3,900	186,600	0	1,449,700
Escapement	2,000	35,900	26,900	347,500	400	142,500	6,900	562,100
Total	2,000	46,500	780,500	842,500	4,300	329,100	6,900	2,011,800
1989 Catch	800	13,600	749,000	557,800	5,700	325,000	14,300	1,666,200
Escapement	4,000	11,200	16,700	487,000	500	206,800	7,600	733,800
Total	4,800	24,800	765,700	1,044,800	6,200	531,800	21,900	2,400,000
1990 Catch	1,200	9,700	941,800	876,200	4,300	410,200	12,600	2,256,000
Escapement	14,000	26,800	35,800	564,300	400	269,200	5,700	916,200
Total	15,200	36,500	977,600	1,440,500	4,700	679,400	18,300	3,172,200
1991 Catch	300	5,400	864,900	1,044,700	4,600	274,600	16,400	2,210,900
Escapement	47,400	26,500	135,200	681,200	(500)	279,200	9,000	1,179,000
Total	47,700	31,900	1,000,100	1,725,900	5,100	553,800	25,400	3,389,900

Figures in parenthesis are extrapolated estimates. Except for Bear and Nelson Rivers where weir and tower counts are used, escapements are indexed totals.



Table 38. North Peninsula Coho Salmon Catches by District and Section 1979-1991.

Section	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Dublin Bay	0	0	0	0	0	0	0	0	0	0	0	0	0
Urilla Bay	0	0	0	0	0	0	0	3,300	7,600	4,800	0	1,300	0
Swanson Lagoon	6,500	0	500	0	700	12,700	26,200	22,000	8,300	12,300	7,000	4,600	18,900
Bechevin Bay	0	100	0	100	700	400	1,400	0	800	100	1,500	0	100
Izembek-Moffet Bay	0	0	0	0	0	0	0	0	2,900	3,000	100	0	0
Northwestern District Total	6,500	100	500	100	1,400	13,100	27,600	25,300	19,600	20,200	8,600	5,900	19,000
Black Hills	0	0	0	0	0	0	0	0	0	0	0	0	0
Caribou Flats	0	0	0	0	0	0	0	0	0	0	0	0	0
Nelson Lagoon	80,000	80,300	133,500	170,700	64,000	113,300	88,200	99,300	83,700	95,400	119,300	79,200	66,500
Herendeen-Moller B.	100	100	100	400	400	700	500	0	0	0	0	600	200
Bear River	1,900	4,900	4,600	11,600	4,200	10,600	15,000	11,300	5,000	15,700	14,500	20,100	36,300
Three Hills	100	0	0	200	0	3,000	1,400	1,900	2,100	3,300	1,400	1,100	2,500
Ilnik	0	400	0	13,100	2,700	6,200	6,200	5,400	21,300	35,000	26,000	11,400	5,000
Inner Port Heiden	16,200	13,300	3,800	18,700	1,700	21,600	15,400	19,400	27,500	27,300	25,900	38,900	37,300
Outer Port Heiden	0	0	0	0	0	0	0	1,200	0	8,600	14,300	0	0
Cinder River	8,000	28,600	12,900	23,400	700	30,000	13,500	300	12,600	28,500	17,500	35,800	50,600
Northern District Total	106,300	127,600	154,900	238,100	73,700	185,400	140,200	138,800	152,200	213,800	218,900	187,100	198,400
NORTH PENINSULA TOTAL	112,800	127,700	155,400	238,200	75,100	198,500	167,800	164,100	171,800	234,000	227,500	193,000	217,400

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Table 39. Northwestern District Pink Salmon Runs 1962-1991<sup>1</sup>  
 (Page 1 of 3)

Year		Izembek - Moffet Bay	Bechevin, Swanson Lagoon & Urillia Bays	Northwestern District Total
1962	Catch	0	30,800	30,800
	Escapement	0	4,000	4,000
	Total	0	34,800	34,800
1963	Catch	0	6,000	6,000
	Escapement	0	4,400	4,400
	Total	0	10,400	10,400
1964	Catch	100	6,700	6,800
	Escapement	0	(15,000)	(15,000)
	Total	100	21,700	21,800
1965	Catch	0	2,000	2,000
	Escapement	0	900	900
	Total	0	2,900	2,900
1966	Catch	0	16,000	16,000
	Escapement	400	1,300	1,700
	Total	400	17,300	17,700
1967	Catch	0	300	300
	Escapement	200	500	700
	Total	200	800	1,000
1968	Catch	0	0	0
	Escapement	1,500	25,000	26,500
	Total	1,500	25,000	26,500
1969	Catch	0	0	0
	Escapement	2,300	2,100	4,400
	Total	2,300	2,100	4,400
1970	Catch	0	7,800	7,800
	Escapement	0	11,100	11,100
	Total	0	18,900	18,900
1971	Catch	0	300	300
	Escapement	100	8,400	8,500
	Total	100	8,700	8,800
1972	Catch	0	0	0
	Escapement	0	1,200	1,200
	Total	0	1,200	1,200

continued

Table 39. Northwestern District Pink Salmon Runs 1962-1991<sup>a</sup>  
(Page 2 of 3)

Year		Izembek - Moffet Bay	Bechevin, Swanson Lagoon & Urilia Bays	Northwestern District Total
1973	Catch	0	0	0
	Escapement	0	(200)	(200)
	Total	0	(200)	(200)
1974	Catch	0	10,300	10,300
	Escapement	0	(23,000)	(23,000)
	Total	0	(33,300)	(33,300)
1975	Catch	0	0	0
	Escapement	100	500	600
	Total	100	500	600
1976	Catch	0	0	0
	Escapement	100	37,200	37,300
	Total	100	37,200	37,300
1977	Catch	0	0	0
	Escapement	200	6,200	6,400
	Total	200	6,200	6,400
1978	Catch	2,200	465,600	467,800
	Escapement	0	90,400	90,400
	Total	2,200	556,000	558,200
1979	Catch	0	1,600	1,600
	Escapement	0	9,300	9,300
	Total	0	10,900	10,900
1980	Catch	0	297,900	297,900
	Escapement	0	94,000	94,000
	Total	0	391,900	391,900
1981	Catch	0	9,100	9,100
	Escapement	0	5,700	5,700
	Total	0	14,800	14,800
1982	Catch	0	5,100	5,100
	Escapement	200	51,500	51,700
	Total	200	56,600	56,800
1983	Catch	0	1,300	1,300
	Escapement	0	3,900	3,900
	Total	0	5,200	5,200

continued

Table 39. Northwestern District Pink Salmon Runs 1962-1991<sup>a</sup>  
(Page 3 of 3)

Year	Bechevin, Izembek - Swanson Lagoon & Urilia Bays			Northwestern District Total
	Moffet Bay			
1984	Catch	100	9,700	9,800
	Escapement	0	33,000	33,000
	Total	100	42,700	42,800
1985	Catch	0	2,000	2,000
	Escapement	0	1,400	1,400
	Total	0	3,400	3,400
1986	Catch	0	9,900	9,900
	Escapement	0	12,900	12,900
	Total	0	22,800	22,800
1987	Catch	0	800	800
	Escapement	0	1,100	1,100
	Total	0	1,900	1,900
1988	Catch	1,200	29,000	30,200
	Escapement	1,800	26,700	28,500
	Total	3,000	55,700	58,700
1989	Catch	0	3,200	3,200
	Escapement	0	1,900	1,900
	Total	0	5,100	5,100
1990	Catch	0	100	100
	Escapement	21,800	400	22,200
	Total	21,800	500	22,300
1991	Catch	0	3,400	3,400
	Escapement	0	1,200	1,200
	Total	0	4,600	4,600

<sup>a</sup>Figures in parenthesis are extrapolated estimates. Escapements are indexed totals.

Table 40. Northwestern District Chum Salmon Runs 1962-1991<sup>a</sup>  
(Page 1 of 3)

Year		Bechevin, Izembek - Swanson Lagoon & Urilia Bays			Northwestern District Total
		Moffet Bay			
1962	Catch	6,200	8,500		14,700
	Escapement	68,00	48,000		116,500
	Total	74,200	57,000		131,200
1963	Catch	3,200	41,300		44,500
	Escapement	133,500	22,300		155,800
	Total	136,700	63,600		200,300
1964	Catch	60,200	25,700		85,900
	Escapement	95,500	(16,000)		111,500
	Total	155,700	41,700		197,400
1965	Catch	4,700	44,600		49,300
	Escapement	24,000	(1,800)		25,800
	Total	28,700	46,400		75,100
1966	Catch	8,900	47,200		56,100
	Escapement	54,000	10,000		64,000
	Total	62,900	57,200		120,100
1967	Catch	9,900	8,900		18,800
	Escapement	32,800	15,400		48,200
	Total	42,700	24,300		67,000
1968	Catch	48,800	200		49,000
	Escapement	142,700	19,800		162,500
	Total	191,500	20,000		211,500
1969	Catch	4,500	1,400		5,900
	Escapement	95,300	8,000		103,300
	Total	99,800	9,400		109,200
1970	Catch	10,000	2,500		12,500
	Escapement	58,100	(5,600)		63,700
	Total	68,100	8,100		76,200
1971	Catch	36,300	7,500		43,800
	Escapement	54,100	5,900		60,000
	Total	90,400	13,400		103,800
1972	Catch	57,900	1,500		59,400
	Escapement	65,800	11,200		77,000
	Total	123,700	12,700		136,400

continued

Table 40. Northwestern District Chum Salmon Runs 1962-1991<sup>a</sup>  
(Page 2 of 3)

Year		Bechevin,		Northwestern District Total
		Izembek - Moffet Bay	Swanson Lagoon & Urillia Bays	
1973	Catch	96,600	6,500	103,100
	Escapement	68,100	(7,500)	75,600
	Total	164,700	(14,000)	178,700
1974	Catch	11,200	3,000	14,200
	Escapement	76,000	(6,100)	82,100
	Total	87,200	9,100	96,300
1975	Catch	3,400	500	3,900
	Escapement	74,300	17,300	91,600
	Total	77,700	17,800	95,500
1976	Catch	38,100	7,900	46,000
	Escapement	127,700	38,300	166,000
	Total	165,800	46,200	212,000
1977	Catch	20,300	22,600	42,900
	Escapement	381,400	54,300	435,700
	Total	401,700	76,900	478,600
1978	Catch	82,300	48,400	130,700
	Escapement	134,100	29,500	163,600
	Total	216,400	77,900	294,300
1979	Catch	17,800	12,500	30,300
	Escapement	178,000	12,400	190,400
	Total	195,800	24,900	220,700
1980	Catch	282,500	85,000	367,500
	Escapement	364,200	41,100	405,300
	Total	646,700	126,100	772,800
1981	Catch	296,400	59,100	355,500
	Escapement	235,000	29,600	264,600
	Total	531,400	88,700	620,100
1982	Catch	57,500	37,700	95,200
	Escapement	166,400	23,800	190,200
	Total	223,900	61,500	285,400

continued

Table 40. Northwestern District Chum Salmon Runs 1962-1991<sup>a</sup>  
(Page 3 of 3)

Year		Bechevin,		
		Izembek - Moffet Bay	Swanson Lagoon & Urilia Bays	Northwestern District Total
1983	Catch	154,800	14,900	169,700
	Escapement	173,300	20,200	193,500
	Total	328,100	35,100	363,200
1984	Catch	102,700	79,800	182,500
	Escapement	427,500	33,400	460,900
	Total	530,200	113,200	643,400
1985	Catch	126,600	116,500	243,100
	Escapement	194,700	25,700	220,400
	Total	321,300	142,200	463,500
1986	Catch	69,100	44,500	113,600
	Escapement	142,400	23,300	165,700
	Total	211,500	67,800	279,300
1987	Catch	148,600	64,600	213,200
	Escapement	286,000	55,500	341,500
	Total	434,600	120,100	554,700
1988	Catch	112,200	66,100	178,300
	Escapement	304,400	51,800	356,200
	Total	416,600	117,900	534,500
1989	Catch	14,500	11,300	25,800
	Escapement	90,600	19,400	110,000
	Total	105,100	30,700	135,800
1990	Catch	24,000	6,600	30,600
	Escapement	92,500	18,400	110,900
	Total	116,500	25,000	141,500
1991	Catch	51,500	11,200	62,700
	Escapement	172,400	49,400	221,800
	Total	223,900	60,600	284,500

<sup>a</sup>Figures in parenthesis are extrapolated estimates. Escapements are indexed totals.

Table 41. Northern District Chum Salmon Runs (Page 1 of 2)

		Three Hills & Inuk					Caribou Flats & Black Hills		Northern District Totals
Year		Cinder River	Port Heiden		Bear River	Herendeen-Moller Bay	Nelson Lagoon		
1962	Catch	200	8,600	600	7,000	0	3,700	0	20,100
	Escapement	500	(1,900)	(1,500)	1,500	18,300	9,700	(1,000)	34,400
	Total	700	(10,500)	(2,100)	8,500	18,300	13,400	(1,000)	54,500
1963	Catch	0	0	700	600	0	4,100	0	5,400
	Escapement	1,200	(7,400)	(1,500)	(3,000)	26,000	7,000	(1,300)	47,000
	Total	1,200	(7,400)	(2,200)	(3,600)	26,000	11,000	(1,300)	52,800
1964	Catch	0	0	2,300	6,500	39,800	3,400	0	52,000
	Escapement	200	1,000	(1,500)	3,000	35,900	2,000	(1,000)	44,600
	Total	200	1,000	(3,800)	9,500	75,700	5,400	(1,000)	96,600
1965	Catch	0	800	2,300	1,500	13,600	2,200	0	20,400
	Escapement	0	8,500	(1,500)	1,000	8,000	4,000	(500)	23,500
	Total	0	9,300	(3,800)	2,500	21,600	6,200	(500)	43,900
1966	Catch	0	0	300	3,700	17,900	4,800	0	26,700
	Escapement	4,400	(3,400)	(1,500)	1,000	56,200	17,000	2,000	85,500
	Total	4,400	(3,400)	(1,800)	4,700	74,100	21,800	2,000	112,200
1967	Catch	0	0	0	13,600	2,400	5,100	0	21,100
	Escapement	2,500	3,000	9,600	2,500	25,000	29,800	(2,000)	74,400
	Total	2,500	3,000	9,600	16,100	27,400	34,900	(2,000)	95,500
1968	Catch	0	0	3,100	7,500	10,500	3,500	0	24,600
	Escapement	0	(11,000)	0	9,500	47,700	18,100	2,000	88,300
	Total	0	(11,000)	3,100	17,000	58,200	21,600	2,000	112,900
1969	Catch	0	1,200	1,300	10,300	7,800	3,500	0	24,100
	Escapement	2,500	(11,000)	(1,500)	1,000	14,000	13,000	500	43,500
	Total	2,500	(12,200)	(2,800)	11,300	21,800	16,500	500	67,600
1970	Catch	0	0	3,200	14,600	12,200	1,500	0	31,500
	Escapement	1,300	22,000	500	2,000	42,800	36,000	(1,500)	106,100
	Total	1,300	22,000	3,700	16,600	55,000	37,500	(1,500)	137,600
1971	Catch	0	0	2,500	12,900	1,200	3,800	0	20,400
	Escapement	2,500	12,100	800	0	14,500	19,000	(500)	49,400
	Total	2,500	12,100	3,300	12,900	15,700	22,800	(500)	69,800
1972	Catch	0	0	800	14,000	7,300	3,200	0	25,300
	Escapement	5,300	12,200	500	3,700	8,000	16,800	(500)	47,000
	Total	5,300	12,200	1,300	17,700	15,300	20,000	(500)	72,300
1973	Catch	0	2,500	900	34,200	13,200	1,800	0	52,600
	Escapement	600	22,800	800	800	3,700	12,700	0	46,800
	Total	600	25,300	1,700	35,000	16,900	14,500	0	99,400
1974	Catch	0	1,000	1,300	11,400	3,200	500	0	17,400
	Escapement	4,600	4,500	0	1,500	3,700	8,300	400	23,000
	Total	4,600	5,500	1,300	12,900	6,900	8,800	400	4400
1975	Catch	0	0	100	3,800	200	700	0	4,800
	Escapement	300	1,500	2,000	2,000	7,300	4,500	0	17,600
	Total	300	1,500	2,100	5,800	7,500	5,200	0	22,400
1976	Catch	0	1,100	2,900	12,300	5,500	5,800	0	27,600
	Escapement	1,900	30,700	5,700	18,000	28,500	42,500	100	127,400
	Total	1,900	31,800	8,600	30,300	34,000	48,300	100	155,000
1977	Catch	0	0	7,100	32,300	34,800	10,700	0	84,900
	Escapement	(1,700)	32,000	(1,500)	17,000	108,500	83,300	1,500	245,500
	Total	(1,700)	32,000	(8,600)	49,300	143,300	94,000	1,500	330,400

-continued)



Table 41. Northern District Chum Salmon Runs (page 2 of 2)

		Cinder River	Port Heiden	Three Hills & Ilnik	Bear River	Herendeen-Moller Bay	Nelson Lagoon	Caribou Flats & Black Hills	Northern District Totals
1978	Catch	0	0	1,200	14,800	6,600	10,300	0	32,700
	Escapement	7,400	22,000	(1,500)	(15,500)	89,300	10,200	(1,000)	146,900
	Total	7,400	22,000	(2,700)	(30,100)	95,900	20,500	(1,000)	179,600
1979	Catch	0	800	700	17,400	10,900	5,700	0	35,500
	Escapement	(3,600)	(32,700)	0	7,000	30,600	37,000	4,000	114,900
	Total	(3,600)	(33,500)	700	24,400	41,500	42,700	4,000	150,400
1980	Catch	0	2,600	29,700	161,700	59,600	80,100	0	333,700
	Escapement	(10,000)	0	(10,000)	20,000	116,100	164,000	10,400	364,000
	Total	(10,000)	(36,300)	(39,700)	181,700	175,700	244,100	10,400	697,900
1981	Catch	0	200	7,100	155,000	126,200	62,800	0	351,300
	Escapement	(11,800)	(73,400)	(11,000)	27,200	85,000	57,000	(11,000)	276,400
	Total	(11,800)	(73,600)	(18,100)	182,200	211,200	119,800	(11,000)	627,700
1982	Catch	0	700	21,200	142,400	50,200	21,400	100	236,000
	Escapement	(5,500)	(35,500)	1,000	42,400	152,000	29,100	(2,000)	267,500
	Total	(5,500)	(36,200)	22,200	184,800	202,200	50,500	(2,100)	503,500
1983	Catch	0	0	26,100	87,700	51,300	14,000	0	179,100
	Escapement	17,200	14,500	11,200	(15,000)	126,000	14,000	1,200	199,100
	Total	17,200	14,500	37,300	(102,700)	177,300	28,000	1,200	378,200
1984	Catch	0	200	174,200	242,300	119,200	78,400	0	614,300
	Escapement	13,000	85,000	4,000	7,000	241,300	49,000	10,000	409,300
	Total	13,000	85,200	178,200	249,300	360,500	127,400	10,000	1,023,600
1985	Catch	0	0	86,600	68,300	266,400	6,600	0	427,900
	Escapement	3,200	26,500	200	5,200	71,700	13,000	4,100	123,900
	Total	3,200	26,500	86,800	73,500	338,100	19,600	4,100	551,800
1986	Catch	100	800	38,700	86,700	27,800	3,600	0	157,700
	Escapement	2,200	12,000	0	6,400	55,800	0,800	700	77,900
	Total	2,300	12,800	38,700	93,100	83,600	4,400	700	235,600
1987	Catch	0	1,000	48,000	85,500	14,200	6,700	0	155,400
	Escapement	12,400	55,400	100	5,000	88,600	5,200	4,700	171,400
	Total	12,400	56,400	48,100	90,500	102,800	11,900	4,700	326,800
1988	Catch	0	4,800	48,200	73,700	75,800	12,600	0	215,100
	Escapement	5,300	41,600	100	3,000	76,500	11,000	6,600	144,100
	Total	5,300	46,400	48,300	76,700	152,300	23,600	6,600	359,200
1989	Catch	0	1,200	16,900	40,300	66,000	5,000	1,900	131,300
	Escapement	5,000	8,900	0	3,500	83,400	0,800	700	102,300
	Total	5,000	10,100	16,900	43,800	149,400	5,800	2,600	233,600
1990	Catch	100	300	7,700	26,900	57,100	2,200	800	95,100
	Escapement	4,000	7,000	(200)	1,100	101,600	(1,000)	700	115,600
	Total	4,100	7,300	7,900	28,000	158,700	3,200	1,500	210,700
1991	Catch	200	400	20,800	72,800	23,600	7,400	3,400	128,600
	Escapement	4,500	13,400	0	(2,400)	55,000	(5,000)	1,200	81,500
	Total	4,700	13,800	20,800	75,200	78,600	12,400	4,600	210,100

<sup>a</sup>Figures in parenthesis are extrapolated estimates. Escapements are indexed totals.

Table 42. NELSON LAGOON SALMON RUNS (Fish in Thousands)

Year	CHINOOK			SOCKEYE			CHUM			COHO
	Escapement	Catch	Total	Escapement	Catch	Total	Escapement	Catch	Total	Catch
1960	-	5.4	-	48.0	93.5	141.5	15.0	16.3	31.3	31.4
1961	0.3	3.7	4.0	138.2	76.8	215.0	10.1	1.9	12.0	20.3
1962	2.7	3.7	6.4	54.2	69.6	123.8	9.7	3.7	13.4	30.0
1963	4.0	2.5	6.5	31.0	71.5	102.5	7.0	4.1	11.1	33.4
1964	3.4	3.3	11.7	80.0	88.7	168.7	2.0	3.4	5.4	30.2
1965	11.9	4.0	15.9	37.0	53.8	90.8	4.0	2.2	6.2	28.4
1966	4.7	2.4	7.1	36.5	60.0	96.5	17.0	4.8	21.8	27.5
1967	5.1	3.6	8.7	42.0	40.2	82.2	29.8	5.1	34.9	34.8
1968	7.3	2.8	10.1	31.0	51.1	82.1	18.1	3.5	21.6	55.9
1969	8.1	2.5	10.6	78.5	72.8	151.3	13.0	1.5	14.5	34.3
1970	2.9	2.6	5.5	82.4	52.7	135.1	36.0	7.7	43.7	24.7
1971	2.3	1.4	3.7	60.1	47.5	107.6	19.0	3.8	22.8	6.9
1972	1.4	1.3	2.7	28.0	23.2	51.2	16.8	3.2	20.0	7.3
1973	1.5	1.5	3.0	18.7	23.9	42.6	12.7	1.8	14.5	16.6
1974	1.1	2.1	3.2	39.9	25.2	65.1	8.3	0.5	8.8	15.8
1975	2.5	1.2	3.7	138.6	51.5	190.1	4.5	0.7	5.2	21.3
1976	3.3	2.2	5.5	108.9	74.9	183.8	42.5	5.8	48.3	19.3
1977	5.6	1.7	7.3	155.0	56.4	211.4	83.3	10.7	94.0	22.3
1978	4.2	3.4	7.6	304.3	213.4	517.7	10.2	10.3	20.5	30.9
1979	11.0	5.4	16.4	360.1	320.9	681.0	37.0	5.7	42.7	80.0
1980	5.5	8.7	14.2	352.6	318.5	671.1	164.0	80.1	244.1	80.3
1981	5.2	11.0	16.2	251.0	374.7	625.7	57.0	62.8	119.8	133.5
1982	7.0	13.5	20.5	179.6	229.2	408.8	29.1	21.4	50.5	170.7
1983	12.5	12.1	24.6	128.8	192.9	321.7	14.0	14.0	28.0	64.0
1984	6.3	7.8	14.1	251.0	118.8	369.8	49.0	78.4	127.4	113.3
1985	3.2	10.9	14.1	318.5	706.3	1024.8	13.0	6.6	19.6	88.2
1986	1.8	4.8	6.6	117.9	178.4	296.3	1.8	3.6	5.4	99.3
1987	4.1	5.8	9.9	155.7	128.5	284.2	5.2	6.7	11.9	83.7
1988	3.3	6.5	9.8	142.5	186.6	329.1	11.0	12.6	23.6	95.4
1989	3.1	3.8	6.9	206.8	325.0	531.8	0.8	5.0	5.8	119.3
1990	2.3	3.6	5.9	269.2	410.2	679.4	-	2.1	-	79.2
1991	6.8	3.5	10.3	279.2	274.6	553.8	-	7.4	-	66.5

Table 43. Daily Nelson Lagoon Section Chinook Salmon Catches 1979-91 (All gear) (Page 1 of 3)

Date		1979		1980		1981		1982		1983	
		Boats	Catch	Boats	Catch	Boats	Catch	Boats	Catch	Boats	Catch
May	30										
	31							5	151		
June	1							5	97		
	2							10	159	1	25
	3							1	2		
	4										
	5										
	6									9	297
	7							17	793	11	309
	8							10	400	12	305
	9							8	345	11	255
	10							9	296		
	11					17	1,513				
	12					20	1,597				
	13	13	1,078							14	1,164
	14	13	668					5	96	14	616
	15	15	319			20	788	18	778	11	397
	16			19	1,813	12	549	23	965	13	579
	17			17	786	19	858	22	776		
	18	18	236	18	696	20	1,031	22	904		
	19	17	358	16	378	18	765				
	20	18	393	13	413					15	672
	21	22	344					18	885	15	187
	22	23	175			23	584	13	604	17	727
	23	22	169	21	282	22	461	22	909	18	911
	24	21	179	25	658	20	331	21	575	17	866
	25	15	157	23	486	19	241	21	457		
	26	22	357	25	439	23	308				
	27	17	227	19	225	17	254			24	701
	28	18	143	23	353	20	219	21	360	25	833
	29	11	50	25	448	9	33	25	427	24	489
	30	19	71	25	270	24	309	29	557	22	369
July	1	22	66	27	143	18	162	26	410		
	2	15	12	17	85	11	12	25	475		
	3	25	24	23	174	24	135				
	4	17	13	12	57	20	148			23	227
	5	19	65	23	114	20	47	28	253	24	369
	6	16	38	23	115	14	89	30	257	23	269
	7	19	8	23	120	27	119	26	258	24	191
	8	20	95	22	108	26	138	25	100	22	176
	9	13	18	24	156	26	86				
	10	21	27	6	47	12	23				
	11	15	6	8	37	22	58			18	78
	12	16	9	9	22	15	36	24	50	21	90
	13	17	23	15	129	15	19	26	99	22	53
	14	11	19	15	34	18	28	23	60	20	37
	15	18	6	13	45	10	5	23	50	17	13
SEASONTOTAL		5,399		8,705		10,961		13,488		12,055	

continued

Table 43. Daily Nelson Lagoon Section Chinook Salmon Catches 1979-91 (All gear) (page 2 of 3)

Date	1984		1985		1986		1987		1988	
	Boats	Catch	Boats	Catch	Boats	Catch	Boats	Catch	Boats	Catch
May 30									1	7
31										
June 1							17	136		
2							10	94		
3			6	43	6	20	6	61		
4	8	95	4	29	6	10	4	31		
5	11	68	4	12	18	270				
6	3	20	6	88					18	296
7	6	23							14	160
8							1	32	14	70
9					12	158	3	41		
10			17	694	10	137	22	502		
11	15	208	3	52	19	191	19	285		
12	15	223	7	100	18	106				
13	10	82	9	119					5	72
14	18	212							4	80
15							24	1,086	11	280
16					2	78			10	340
17			22	821	22	486	23	363		
18	13	396	19	692	26	279	22	358		
19	15	431	18	447	24	333				
20			20	390	27	334			28	721
21			22	499	24	250			25	595
22			19	427	22	157	24	672	24	455
23			17	461	25	330	22	599	27	654
24			29	520	25	277	21	189		
25	12	44	24	321	25	291	26	249		
26	7	8	21	427	26	144				
27	5	3	19	303					29	856
28			20	317					29	599
29							28	251	22	345
30					25	121	30	239	32	295
July 1			31	905	32	264	27	128	22	193
2	10	149	6	230	31	183	31	138		
3	10	83	28	585	27	130				
4			22	324					33	116
5			16	269					26	102
6			24	276			38	172	27	60
7			20	150	33	123			27	61
8			26	359	30	63				
9	28	1,575	18	58			34	89		
10	25	872	29	182						
11	29	685	25	103			41	261	31	41
12	20	134	26	272					39	20
13	27	585	12	47	31	47	27	22	27	10
14	28	605	27	99			23	18	27	7
15	22	304	28	105			25	15	26	7
SEASON TOTAL		7,802		10,850		4,849		5,823		6,474

Table 43. Daily Nelson Lagoon Section Chinook Salmon Catches 1979-91 (All gear) (page 3 of 3)

Date		1989		1990		1991	
		Boats	Catch	Boats	Catch	Boats	Catch
May	30						
	31						
June	1						
	2						
	3					12	168
	4			18	193	11	144
	5	18	204	16	163	15	121
	6	15	178	11	104		
	7	6	74				
	8						
	9						
	10					21	446
	11			17	278	23	412
	12	24	416	16	346	20	358
	13	24	516	18	165		
	14	22	423				
	15						
	16						
	17					22	430
	18	21	157	22	378	23	376
	19	11	30	23	329	20	208
	20	6	6	21	209	20	191
	21			20	196		
	22						
	23						
	24					28	169
	25			28	254	24	153
	26	26	75	27	170	25	108
	27	26	120	29	204	28	100
	28	27	197	30	169	27	55
	29	23	207	20	40		
	30	30	287				
July	1						
	2			37	47		
	3	36	221	37	52		
	4	34	81	35	59		
	5	27	71	35	44		
	6	32	53	34	29	13	10
	7	29	60	34	34	28	11
	8	31	66	31	26	24	17
	9	31	32	34	21	26	21
	10	32	26	30	18	22	5
	11	28	205	29	13	24	3
	12	29	20	33	6	25	6
	13	30	21	32	4	25	5
	14	30	22	28	4	23	4
	15	25	5	25	3	21	1
SEASON TOTAL		3,822		3,573		3,450	

Table 44. Daily Port Heiden Section Chinook Salmon Catches 1979-91 (All gear) (Page 1 of 3)

Date	1979		1980		1981		1982		1983	
	Boats	Catch	Boats	Catch	Boats	Catch	Boats	Catch	Boats	Catch
May 25					6	94				
26					11	218				
27					10	93				
28	2	14	4	39	7	85				
29	10	524	5	96						
30	10	288								
31	15	577					5	66	11	369
June 1	13	218			12	514	10	139	14	437
2			4	69	14	344	14	221	17	484
3			3	43	13	289	12	220		
4	19	736	12	270	13	117				
5	19	777	17	370						
6	19	561							21	1,069
7	17	724					20	1,194	21	415
8	19	634			16	902	19	721	13	271
9			13	631	17	639	20	603	19	370
10			22	488	17	411	17	447		
11	18	854	21	458	19	519				
12	6	185	20	662						
13	16	1,070							18	1,740
14	17	653					20	2,013	18	720
15	10	372			18	1,050	20	1,589	9	204
16			15	465	17	478	18	1,035	5	217
17			22	679			19	821		
18	14	515	22	559						
19	15	328	22	248						
20	14	265							12	368
21	13	224					17	1,298		
22	2	43			7	141	12	324		
23			11	75	5	181	4	163	1	113
24			9	66			2	79		
25	1	2	8	21						
26	2	63	9	46						
27	5	41	8	61						
28	6	74								
29					2	1				
30			9	3	4	1				
SEASON TOTAL		9,742		5,349		6,077		10,933		6,777

-continued-

Table 44. Daily Port Heiden Section Chinook Salmon Catches 1979-91 (All gear) (page 2 of 3)

<u>Date</u>	<u>1984</u>		<u>1985</u>		<u>1986</u>		<u>1987</u>		<u>1988</u>	
	<u>Boats</u>	<u>Catch</u>	<u>Boats</u>	<u>Catch</u>	<u>Boats</u>	<u>Catch</u>	<u>Boats</u>	<u>Catch</u>	<u>Boats</u>	<u>Catch</u>
May 25										
26										
27										
28										
29										
30										
31										
June 1							7	181	1	42
2							8	124		
3					1	5	13	188		
4	13	250			6	61	5	106		
5	14	459			2	40				
6	19	325							17	496
7	20	366							17	556
8							24	568	14	326
9					19	356	29	643		
10			14	544	16	181	33	325		
11	23	1,390	13	457	8	53	6	61		
12	23	785	14	510	3	18				
13	22	601	14	338					17	1,041
14	20	472							12	582
15							24	605	19	271
16					22	431	20	380		
17			21	1,280	9	216				
18	23	893	9	193	13	201				
19	15	412	11	207	6	76				
20	5	174	1	44					19	733
21	1	53							19	1,035
22									17	516
23					1	47				
24			1	323	1	20				
25	1	85	1	153	1	11				
26	1	63	1	132	1	10				
27	1	65	1	149	1	4			16	78
28	1	65			1	12			7	28
29							10	15		
30					1	4	4	5	2	17
SEASONTOTAL	6,458		4,330		1,821		3,217		5,816	

continued

Table 44. Daily Port Heiden Section Chinook Salmon Catches 1979-91 (All gear) (page 3 of 3)

Date	1989		1990		1991	
	Boats	Catch	Boats	Catch	Boats	Catch
May 25						
26						
27						
28						
29						
30						
31						
June 1						
2						
3						
4						
5	15	354	4	261		
6	13	238	7	284		
7	4	113				
8						
9						
10					15	632
11			13	1,101	4	167
12	18	660	14	861	10	501
13	16	525	10	385		
14	15	318				
15						
16						
17					16	901
18			15	1,484	17	663
19	11	483	8	158	11	258
20	8	176	5	36		
21	2	41				
22						
23						
24						
25			5	87		
26	1	3	7	30	1	11
27			1	8		
28	1	1	1	1		
29			1	0		
30	1	0	1	0		
SEASONTOTAL	2,927		4,699		3,139	

The drift gillnet fleet moves to the Bristol Bay Area during late June. Remaining effort usually consists of several gillnetters in front of Meshik Village.



Table 45. \*1990 Nelson Lagoon Daily Sockeye Salmon Catches  
(Numbers of Fish, All Gear)

Date	Permits	Catch	Date	Permits	Catch
June 04	18	128	Aug. 03	23	3,895
05	16	159	04	17	4,237
06	11	196	05	21	4,610
			06	24	3,545
11	17	960	07	22	3,415
12	16	951	08	18	2,809
13	18	710	09	14	2,851
18	22	3,127	13	1	300
19	23	3,788	14	30	5,377
20	21	2,620	15	25	1,641
21	20	2,650			
			20	30	2,429
25	28	12,857	21	25	1,004
26	27	9,877	22	29	847
27	29	11,745			
28	30	19,725	27	33	622
29	20	6,890	28	32	567
			29	32	502
July 02	37	22,568			
03	37	19,650	Sept. 03	31	163
04	35	13,640	04	30	145
05	35	16,480	05	30	237
06	34	24,205			
07	34	18,445	10	22	26
08	31	20,760	11	22	32
09	34	13,197	12	18	19
10	31	14,933	13	6	0
11	29	17,380	14	2	18
12	33	18,045			
13	32	9,635			
14	28	7,805			
15	25	7,149			
16	28	5,320			
17	26	4,255			
18	23	3,641			
19	22	3,899			
20	13	3,654			
21	19	4,315			
22	19	3,717			
23	24	2,950			
24	20	4,340			
25	20	3,880			
26	19	5,085			
30	27	6,700			
31	26	8,335			
Aug. 01	24	6,165			
02	22	4,595			

Season Total 410,227

\*1990 daily Nelson Lagoon  
sockeye harvests are included  
in this report because they  
were inadvertently left out  
of the 1990 Management Report

Table 46. 1991 Nelson Lagoon Daily Sockeye Salmon Catches (Numbers of Fish, All Gear)

Date	Permits	Catch	Date	Permits	Catch
June 03	12	217	Aug. 05	18	2,480
04	11	193	06	17	2,249
05	15	188	07	14	1,518
			08	10	526
10	21	1,462			
11	23	1,398	12	21	1,506
12	20	1,797	13	18	821
			14	17	584
17	22	5,705	15	15	381
18	23	5,757			
19	20	4,669	19	25	612
20	20	5,565	20	25	529
			21	24	385
24	28	8,425			
25	24	7,421	26	29	958
26	25	7,227	27	28	303
27	28	8,702	28	29	547
28	27	6,268			
			Sept. 02	30	373
July 06	13	14,025	03	30	468
07	28	16,880	04	29	210
08	24	10,725			
09	26	12,981	07	25	0
10	22	11,348	08	27	11
11	24	11,974	09	27	16
12	25	10,343	10	22	128
13	25	10,495	11	17	0
14	23	9,933			
15	21	6,572	Season Total		274,635
16	10	617			
17	14	3,140			
18	25	10,648			
19	24	10,101			
20	25	10,543			
21	25	6,974			
22	21	5,070			
23	19	4,378			
24	18	3,176			
25	19	3,145			
26	20	3,239			
27	16	3,499			
28	19	3,388			
29	18	3,443			
30	18	2611			
31	13	2,050			
Aug. 01	16	1,693			
02	13	2,045			

Table 47. 1991 Nelson Lagoon Daily Coho Salmon Catches (Numbers of Fish, All Gear)

Date	Permits	Catch
July 18	25	1
19	24	1
20	25	2
21	25	6
22	21	2
23	19	3
24	18	4
25	19	4
26	20	4
27	16	1
28	19	3
29	18	6
30	18	6
31	13	1
Aug. 01	16	8
02	13	7
05	18	42
06	17	114
07	14	84
08	10	77
12	21	565
13	18	424
14	17	369
15	15	318
19	25	2,727
20	25	2,326
21	24	1,868
26	29	4,843
27	28	4,636
28	29	5,668
Sept. 02	30	7,950
03	30	5,891
04	29	6,565
07	25	4,720
08	27	5,845
09	27	4,595
10	22	3,435
11	17	3,399
Season Total		66,520

Table 48A. 1991 Inner Port Heiden Daily Coho Salmon Catches  
(Numbers of Fish, All Gear)

Date	Permits	Catch
Aug. 12	8	792
13	6	1,167
14	3	409
15	5	722
16	6	583
19	17	3,120
20	21	3,277
21	18	2,787
22	21	3,002
26	4	1,253
27	6	2,584
28	13	3,783
29	11	1,826
30	8	2,500
Sept. 02	9	2,259
03	8	1,165
04	10	2,114
05	13	2,473
09	10	955
10	6	478
Season Total		37,249

Table 48B. 1991 Cinder River Daily Coho Salmon Catches (Numbers of Fish, All Gear)

<u>Date</u>	<u>Permits</u>	<u>Catch</u>
Aug. 05	9	889
07	5	379
12	19	3,594
13	26	4,299
14	17	2,104
19	39	8,773
20	33	5,355
21	38	8,175
26	3	583
27	7	1,489
28	6	1,651
Sept. 02	23	3,903
03	24	4,273
04	18	2,465
09	8	1,085
10	8	511
11	7	<u>1,115</u>
Season Total		50,643

Table 49. Sockeye salmon daily and cumulative escapement counts through the Bear River weir , 1991.

Date	Daily			Cumulative			Daily Percent		Cumulative Percent	
	Adults	Jacks	Total	Adults	Jacks	Total	Adults	Jacks	Adults	Jacks
May 31	1	0	1	1	0	1	0.0	0.0	0.0	0.0
June 1	0	0	0	1	0	1	0.0	0.0	0.0	0.0
2	0	0	0	1	0	1	0.0	0.0	0.0	0.0
3	0	0	0	1	0	1	0.0	0.0	0.0	0.0
4	14	0	14	15	0	15	0.0	0.0	0.0	0.0
5	23	0	23	38	0	38	0.0	0.0	0.0	0.0
6	72	0	72	110	0	110	0.0	0.0	0.0	0.0
7	162	0	162	272	0	272	0.0	0.0	0.0	0.0
8	173	2	175	445	2	447	0.0	0.0	0.1	0.0
9	4	0	4	449	2	451	0.0	0.0	0.1	0.0
10	19	0	19	468	2	470	0.0	0.0	0.1	0.0
11	122	0	122	590	2	592	0.0	0.0	0.1	0.0
12	174	2	176	764	4	768	0.0	0.0	0.1	0.0
13	335	2	337	1099	6	1105	0.1	0.0	0.2	0.0
14	475	1	476	1574	7	1581	0.1	0.0	0.3	0.0
15	668	5	673	2242	12	2254	0.1	0.0	0.4	0.0
16	835	7	842	3077	19	3096	0.1	0.0	0.5	0.0
17	522	13	535	3599	32	3631	0.1	0.0	0.6	0.0
18	1428	35	1463	5027	67	5094	0.2	0.0	0.8	0.0
19	3858	103	3961	8885	170	9055	0.6	0.0	1.5	0.0
20	12636	277	12913	21521	447	21968	2.1	0.0	3.6	0.1
21	5239	72	5311	26760	519	27279	0.9	0.0	4.4	0.1
22	2498	30	2528	29258	549	29807	0.4	0.0	4.8	0.1
23	1073	11	1084	30331	560	30891	0.2	0.0	5.0	0.1
24	2534	35	2569	32865	595	33460	0.4	0.0	5.4	0.1
25	3548	55	3603	36413	650	37063	0.6	0.0	6.0	0.1
26	4566	103	4669	40979	753	41732	0.8	0.0	6.8	0.1
27	4150	88	4238	45129	841	45970	0.7	0.0	7.4	0.1
28	6470	111	6581	51599	952	52551	1.1	0.0	8.5	0.2
29	3619	120	3739	55218	1072	56290	0.6	0.0	9.1	0.2
30	1993	59	2052	57211	1131	58342	0.3	0.0	9.4	0.2
July 1	332	34	366	57543	1165	58708	0.1	0.0	9.5	0.2
2	484	46	530	58027	1211	59238	0.1	0.0	9.6	0.2
3	24800	284	25084	82827	1495	84322	4.1	0.0	13.7	0.2
4	47087	493	47580	129914	1988	131902	7.8	0.1	21.4	0.3
5	48711	423	49134	178625	2411	181036	8.0	0.1	29.5	0.4
6	25914	358	26272	204539	2769	207308	4.3	0.1	33.8	0.5
7	23876	341	24217	228415	3110	231525	3.9	0.1	37.7	0.5
8	15871	301	16172	244286	3411	247697	2.6	0.0	40.3	0.6
9	17503	368	17871	261789	3779	265568	2.9	0.1	43.2	0.6
10	14853	235	15088	276642	4014	280656	2.5	0.0	45.7	0.7

-Continued-

Table 49. Sockeye salmon daily and cumulative escapement counts through the Bear River weir , 1991.

Date	Daily			Cumulative			Daily Percent		Cumulative Percent	
	Adults	Jacks	Total	Adults	Jacks	Total	Adults	Jacks	Adults	Jacks
11	11485	404	11889	288127	4418	292545	1.9	0.1	47.5	0.7
12	10378	492	10870	298505	4910	303415	1.7	0.1	49.3	0.8
13	5756	257	6013	304261	5167	309428	0.9	0.0	50.2	0.9
14	9241	222	9463	313502	5389	318891	1.5	0.0	51.7	0.9
15	7642	273	7915	321144	5662	326806	1.3	0.0	53.0	0.9
16	2827	46	2873	323971	5708	329679	0.5	0.0	53.5	0.9
17	4342	119	4461	328313	5827	334140	0.7	0.0	54.2	1.0
18	8922	271	9193	337235	6098	343333	1.5	0.0	55.6	1.0
19	8842	498	9340	346077	6596	352673	1.5	0.1	57.1	1.1
20	6715	530	7245	352792	7126	359918	1.1	0.1	58.2	1.2
21	7080	326	7406	359872	7452	367324	1.2	0.1	59.4	1.2
22	9447	622	10069	369319	8074	377393	1.6	0.1	60.9	1.3
23	9148	530	9678	378467	8604	387071	1.5	0.1	62.5	1.4
24	8257	295	8552	386724	8899	395623	1.4	0.0	63.8	1.5
25	6222	200	6422	392946	9099	402045	1.0	0.0	64.8	1.5
26	3738	191	3929	396684	9290	405974	0.6	0.0	65.5	1.5
27	5496	260	5756	402180	9550	411730	0.9	0.0	66.4	1.6
28	4106	331	4437	406286	9881	416167	0.7	0.1	67.0	1.6
29	6314	465	6779	412600	10346	422946	1.0	0.1	68.1	1.7
30	5171	353	5524	417771	10699	428470	0.9	0.1	68.9	1.8
31	3461	156	3617	421232	10855	432087	0.6	0.0	69.5	1.8
Aug. 1	4745	247	4992	425977	11102	437079	0.8	0.0	70.3	1.8
2	4378	237	4615	430355	11339	441694	0.7	0.0	71.0	1.9
3	5366	279	5645	435721	11618	447339	0.9	0.0	71.9	1.9
4	3106	101	3207	438827	11719	450546	0.5	0.0	72.4	1.9
5	6590	323	6913	445417	12042	457459	1.1	0.1	73.5	2.0
6	6189	204	6393	451606	12246	463852	1.0	0.0	74.5	2.0
7	5076	179	5255	456682	12425	469107	0.8	0.0	75.4	2.1
8	2984	269	3253	459666	12694	472360	0.5	0.0	75.9	2.1
9	3275	271	3546	462941	12965	475906	0.5	0.0	76.4	2.1
10	3199	301	3500	466140	13266	479406	0.5	0.0	76.9	2.2
11	1972	186	2158	468112	13452	481564	0.3	0.0	77.2	2.2
12	4560	439	4999	472672	13891	486563	0.8	0.1	78.0	2.3
13	6307	507	6814	478979	14398	493377	1.0	0.1	79.0	2.4
14	4287	402	4689	483266	14800	498066	0.7	0.1	79.7	2.4
15	3628	329	3957	486894	15129	502023	0.6	0.1	80.3	2.5
16	1452	96	1548	488346	15225	503571	0.2	0.0	80.6	2.5
17	1127	88	1215	489473	15313	504786	0.2	0.0	80.8	2.5
18	3912	477	4389	493385	15790	509175	0.6	0.1	81.4	2.6
19	4647	619	5266	498032	16409	514441	0.8	0.1	82.2	2.7
20	1450	185	1635	499482	16594	516076	0.2	0.0	82.4	2.7
Post										
Aug. 20	80924	9000	89924	580406	25594	606000	13.4	1.5	95.8	4.2
Total	580406	25594	606000	580406	25594	606000	95.8	4.2	95.8	4.2

August 20 escapement reflects only a partial daily count.

Table. 50. Chinook, pink, and chum salmon daily and cumulative escapement counts through the Bear River weir, 1991.

Date	Daily			Cumulative		
	Chinook	Pink	Chum	Chinook	Pink	Chum
May 31	0	0	0	0	0	0
June 1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
11	0	0	0	0	0	0
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
16	0	0	0	0	0	0
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	0	0	0	0	0
20	0	0	0	0	0	0
21	0	0	0	0	0	0
22	0	0	0	0	0	0
23	0	0	0	0	0	0
24	0	0	0	0	0	0
25	0	0	0	0	0	0
26	0	0	0	0	0	0
27	0	0	0	0	0	0
28	0	0	0	0	0	0
29	0	0	0	0	0	0
30	0	0	0	0	0	0
July 1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	1	0	0	1	0	0
7	0	0	0	1	0	0
8	0	0	0	1	0	0
9	0	0	0	1	0	0
10	0	0	0	1	0	0
11	0	0	0	1	0	0
12	0	0	0	1	0	0
13	0	0	0	1	0	0

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Table. 50. Chinook, pink, and chum salmon daily and cumulative escapement counts through the Bear River weir, 1991.

Date	Daily			Cumulative		
	Chinook	Pink	Chum	Chinook	Pink	Chum
14	0	0	0	1	0	0
15	2	6	0	3	6	0
16	0	0	0	3	6	0
17	6	4	0	9	10	0
18	0	5	0	9	15	0
19	2	6	0	11	21	0
20	1	11	0	12	32	0
21	1	10	0	13	42	0
22	3	19	0	16	61	0
23	2	39	0	18	100	0
24	0	71	1	18	171	1
25	1	33	0	19	204	1
26	1	30	0	20	234	1
27	0	51	0	20	285	1
28	0	63	2	20	348	3
29	4	115	4	24	463	7
30	3	88	1	27	551	8
31	3	30	0	30	581	8
Aug. 1	2	32	0	32	613	8
2	1	68	0	33	681	8
3	4	88	0	37	769	8
4	0	23	0	37	792	8
5	1	92	1	38	884	9
6	0	67	1	38	951	10
7	1	64	0	39	1015	10
8	0	43	0	39	1058	10
9	1	52	0	40	1110	10
10	2	18	0	42	1128	10
11	3	11	0	45	1139	10
12	4	37	0	49	1176	10
13	3	104	0	52	1280	10
14	0	1312	0	52	2592	10
15	0	1336	10	52	3928	20
16	0	1348	0	52	5276	20
17	0	1356	0	52	6632	20
18	3	20	0	55	6652	20
19	3	23	2	58	6675	22
20	0	2	2	58	6677	24
Total	58	6677	24	58	6677	24

August 20 escapement reflects only a partial daily count.

Table 51. Sockeye salmon daily and cumulative escapement counts through the Nelson River weir , 1991.

Date	Daily			Cumulative			Daily Percent		Cumulative Percent		
	Adults	Jacks	Total	Adults	Jacks	Total	Adults	Jacks	Adults	Jacks	Total
June 8	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
9	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
10	3	0	3	3	0	3	0.0	0.0	0.0	0.0	0.0
11	2	0	2	5	0	5	0.0	0.0	0.0	0.0	0.0
12	0	0	0	5	0	5	0.0	0.0	0.0	0.0	0.0
13	0	0	0	5	0	5	0.0	0.0	0.0	0.0	0.0
14	0	0	0	5	0	5	0.0	0.0	0.0	0.0	0.0
15	1	0	1	6	0	6	0.0	0.0	0.0	0.0	0.0
16	0	0	0	6	0	6	0.0	0.0	0.0	0.0	0.0
17	0	0	0	6	0	6	0.0	0.0	0.0	0.0	0.0
18	0	0	0	6	0	6	0.0	0.0	0.0	0.0	0.0
19	89	4	93	95	4	99	0.0	0.0	0.0	0.0	0.0
20	0	0	0	95	4	99	0.0	0.0	0.0	0.0	0.0
21	735	65	800	830	69	899	0.3	0.0	0.3	0.0	0.3
22	88	7	95	918	76	994	0.0	0.0	0.3	0.0	0.4
23	7495	735	8230	8413	811	9224	2.8	0.3	3.1	0.3	3.4
24	2857	181	3038	11270	992	12262	1.1	0.1	4.2	0.4	4.6
25	3343	115	3458	14613	1107	15720	1.2	0.0	5.4	0.4	5.9
26	1568	81	1649	16181	1188	17369	0.6	0.0	6.0	0.4	6.5
27	2448	164	2612	18629	1352	19981	0.9	0.1	6.9	0.5	7.4
28	1358	78	1436	19987	1430	21417	0.5	0.0	7.4	0.5	8.0
29	3406	226	3632	23393	1656	25049	1.3	0.1	8.7	0.6	9.3
30	2980	255	3235	26373	1911	28284	1.1	0.1	9.8	0.7	10.5
July 1	3418	147	3565	29791	2058	31849	1.3	0.1	11.1	0.8	11.9
2	2441	141	2582	32232	2199	34431	0.9	0.1	12.0	0.8	12.8
3	3240	212	3452	35472	2411	37883	1.2	0.1	13.2	0.9	14.1
4	8292	401	8693	43764	2812	46576	3.1	0.1	16.3	1.0	17.4
5	18794	687	19481	62558	3499	66057	7.0	0.3	23.3	1.3	24.6
6	37421	1191	38612	99979	4690	104669	13.9	0.4	37.3	1.7	39.0
7	21679	919	22598	121658	5609	127267	8.1	0.3	45.3	2.1	47.4
8	8330	369	8699	129988	5978	135966	3.1	0.1	48.4	2.2	50.7
9	12206	314	12520	142194	6292	148486	4.5	0.1	53.0	2.3	55.3
10	7479	208	7687	149673	6500	156173	2.8	0.1	55.8	2.4	58.2
11	12389	299	12688	162062	6799	168861	4.6	0.1	60.4	2.5	62.9
12	10726	454	11180	172788	7253	180041	4.0	0.2	64.4	2.7	67.1
13	4241	232	4473	177029	7485	184514	1.6	0.1	66.0	2.8	68.7
14	9168	375	9543	186197	7860	194057	3.4	0.1	69.4	2.9	72.3
15	8998	254	9252	195195	8114	203309	3.4	0.1	72.7	3.0	75.7
16	6047	215	6262	201242	8329	209571	2.3	0.1	75.0	3.1	78.1
17	3917	175	4092	205159	8504	213663	1.5	0.1	76.4	3.2	79.6
18	5364	251	5615	210523	8755	219278	2.0	0.1	78.4	3.3	81.7

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Table 51. Sockeye salmon daily and cumulative escapement counts through the Nelson River weir, 1991.

Date	Daily			Cumulative			Daily Percent		Cumulative Percent		
	Adults	Jacks	Total	Adults	Jacks	Total	Adults	Jacks	Adults	Jacks	Total
19	5278	318	5596	215801	9073	224874	2.0	0.1	80.4	3.4	83.8
20	5023	240	5263	220824	9313	230137	1.9	0.1	82.3	3.5	85.7
21	1256	94	1350	222080	9407	231487	0.5	0.0	82.7	3.5	86.2
22	4470	177	4647	226550	9584	236134	1.7	0.1	84.4	3.6	88.0
23	4006	94	4100	230556	9678	240234	1.5	0.0	85.9	3.6	89.5
24	3971	120	4091	234527	9798	244325	1.5	0.0	87.4	3.7	91.0
25	2375	61	2436	236902	9859	246761	0.9	0.0	88.3	3.7	91.9
26	1503	31	1534	238405	9890	248295	0.6	0.0	88.8	3.7	92.5
27	1697	41	1738	240102	9931	250033	0.6	0.0	89.5	3.7	93.2
28	1274	37	1311	241376	9968	251344	0.5	0.0	89.9	3.7	93.6
29	1188	23	1211	242564	9991	252555	0.4	0.0	90.4	3.7	94.1
30	1678	72	1750	244242	10063	254305	0.6	0.0	91.0	3.7	94.7
31	936	39	975	245178	10102	255280	0.3	0.0	91.3	3.8	95.1
Aug. 1	1005	38	1043	246183	10140	256323	0.4	0.0	91.7	3.8	95.5
Post August 1	11712	365	12077	257895	10505	268400	4.4	0.1	96.1	3.9	100.0
Total	257895	10505	268400	257895	10505	268400	96.1	3.9	96.1	3.9	100.0

Table. 52. Chinook, pink, and chum salmon daily and cumulative escapement counts through the Nelson River weir, 1991.

Date	Daily			Cumulative		
	Chinook	Pink	Chum	Chinook	Pink	Chum
June 8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
11	1	0	0	1	0	0
12	0	0	0	1	0	0
13	0	0	0	1	0	0
14	0	0	0	1	0	0
15	0	0	0	1	0	0
16	0	0	0	1	0	0
17	0	0	0	1	0	0
18	0	0	0	1	0	0
19	0	0	0	1	0	0
20	0	0	0	1	0	0
21	1	0	0	2	0	0
22	0	0	0	2	0	0
23	66	0	0	68	0	0
24	6	0	0	74	0	0
25	0	0	0	74	0	0
26	0	0	0	74	0	0
27	0	0	0	74	0	0
28	2	0	0	76	0	0
29	5	0	0	81	0	0
30	6	0	0	87	0	0
July 1	6	0	0	93	0	0
2	2	1	0	95	1	0
3	0	0	0	95	1	0
4	3	0	0	98	1	0
5	1	0	0	99	1	0
6	0	0	5	99	1	5
7	1	1	4	100	2	9
8	0	0	1	100	2	10
9	0	0	0	100	2	10
10	2	1	1	102	3	11
11	4	4	1	106	7	12
12	2	1	0	108	8	12
13	2	0	2	110	8	14
14	3	1	3	113	9	17
15	2	8	1	115	17	18
16	9	3	28	124	20	46
17	2	2	4	126	22	50
18	1	2	1	127	24	51

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Table. 52. Chinook, pink, and chum salmon daily and cumulative escapement counts through the Nelson River weir, 1991.

Date	Daily			Cumulative		
	Chinook	Pink	Chum	Chinook	Pink	Chum
7/19	4	2	3	131	26	54
20	3	7	8	134	33	62
21	1	2	1	135	35	63
22	21	11	36	156	46	99
23	26	9	22	182	55	121
24	29	30	78	211	85	199
25	20	17	35	231	102	234
26	27	13	23	258	115	257
27	33	51	46	291	166	303
28	29	43	46	320	209	349
29	21	40	65	341	249	414
30	132	35	134	473	284	548
31	44	26	50	517	310	598
Aug. 1	34	24	103	551	334	701
Total	551	334	701	551	334	701

Total escapement estimates for chinook salmon include aerial survey data. (See aerial survey counts). Aerial survey data is not available for pink and chum salmon.

Table 53. Sockeye salmon daily and cumulative escapement counts through the Ilnik River Weir, 1991.

Date	Daily			Cumulative			Daily Percent		Cumulative Percent		
	Adults	Jacks	Total	Adults	Jacks	Total	Adults	Jacks	Adults	Jacks	Total
June 4	573	23	596	573	23	596	0.4	0.0	0.4	0.0	0.4
5	809	22	831	1382	45	1427	0.6	0.0	1.0	0.0	1.1
6	805	26	831	2187	71	2258	0.6	0.0	1.6	0.1	1.7
7	27	3	30	2214	74	2288	0.0	0.0	1.6	0.1	1.7
8	313	15	328	2527	89	2616	0.2	0.0	1.9	0.1	1.9
9	612	23	635	3139	112	3251	0.5	0.0	2.3	0.1	2.4
10	73	0	73	3212	112	3324	0.1	0.0	2.4	0.1	2.5
11	2	0	2	3214	112	3326	0.0	0.0	2.4	0.1	2.5
12	359	15	374	3573	127	3700	0.3	0.0	2.6	0.1	2.7
13	328	16	344	3901	143	4044	0.2	0.0	2.9	0.1	3.0
14	118	3	121	4019	146	4165	0.1	0.0	3.0	0.1	3.1
15	246	1	247	4265	147	4412	0.2	0.0	3.2	0.1	3.3
16	420	4	424	4685	151	4836	0.3	0.0	3.5	0.1	3.6
17	1268	30	1298	5953	181	6134	0.9	0.0	4.4	0.1	4.5
18	502	7	509	6455	188	6643	0.4	0.0	4.8	0.1	4.9
19	687	13	700	7142	201	7343	0.5	0.0	5.3	0.1	5.4
20	2763	54	2817	9905	255	10160	2.0	0.0	7.3	0.2	7.5
21	1309	21	1330	11214	276	11490	1.0	0.0	8.3	0.2	8.5
22	1017	7	1024	12231	283	12514	0.8	0.0	9.1	0.2	9.3
23	1374	10	1384	13605	293	13898	1.0	0.0	10.1	0.2	10.3
24	1542	15	1557	15147	308	15455	1.1	0.0	11.2	0.2	11.4
25	2010	41	2051	17157	349	17506	1.5	0.0	12.7	0.3	13.0
26	6558	44	6602	23715	393	24108	4.9	0.0	17.6	0.3	17.9
27	8317	126	8443	32032	519	32551	6.2	0.1	23.7	0.4	24.1
28	5775	138	5913	37807	657	38464	4.3	0.1	28.0	0.5	28.5
29	3902	73	3975	41709	730	42439	2.9	0.1	30.9	0.5	31.4
30	1403	31	1434	43112	761	43873	1.0	0.0	31.9	0.6	32.5
July 1	1289	45	1334	44401	806	45207	1.0	0.0	32.9	0.6	33.5
2	2025	49	2074	46426	855	47281	1.5	0.0	34.4	0.6	35.0
3	7409	136	7545	53835	991	54826	5.5	0.1	39.9	0.7	40.6
4	10503	219	10722	64338	1210	65548	7.8	0.2	47.7	0.9	48.6
5	16056	242	16298	80394	1452	81846	11.9	0.2	59.6	1.1	60.6
6	16090	259	16349	96484	1711	98195	11.9	0.2	71.5	1.3	72.7
7	8834	77	8911	105318	1788	107106	6.5	0.1	78.0	1.3	79.3
8	5285	118	5403	110603	1906	112509	3.9	0.1	81.9	1.4	83.3
9	7011	149	7160	117614	2055	119669	5.2	0.1	87.1	1.5	88.6
10	1770	67	1837	119384	2122	121506	1.3	0.0	88.4	1.6	90.0
11	1665	79	1744	121049	2201	123250	1.2	0.1	89.7	1.6	91.3
Post July 11							0.0	0.0	0.0	0.0	
July 11	9700	2050	11750	130749	4251	135000	7.2	1.5	96.9	3.1	100.0
Total	130749	4251	135000	130749	4251	135000	96.9	3.1	96.9	3.1	100.0

Post July 11 data reflect aerial survey estimates.

Table 54. Sockeye salmon daily and cumulative counts through the Orzinski Lake weir, 1991.

Date	Daily			Cumulative			Daily Percent		Cumulative Percent		
	Adults	Jacks	Total	Adults	Jacks	Total	Adults	Jacks	Adults	Jacks	Total
June 14	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
15	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
16	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
17	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
18	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
19	0	1	1	0	1	1	0.0	0.0	0.0	0.0	0.0
20	1	0	1	1	1	2	0.0	0.0	0.0	0.0	0.0
21	1	1	2	2	2	4	0.0	0.0	0.0	0.0	0.0
22	0	1	1	2	3	5	0.0	0.0	0.0	0.0	0.0
23	10	4	14	12	7	19	0.0	0.0	0.0	0.0	0.0
24	0	0	0	12	7	19	0.0	0.0	0.0	0.0	0.0
25	1	1	2	13	8	21	0.0	0.0	0.0	0.0	0.1
26	11	5	16	24	13	37	0.0	0.0	0.1	0.0	0.1
27	276	72	348	300	85	385	0.7	0.2	0.8	0.2	1.0
28	1	2	3	301	87	388	0.0	0.0	0.8	0.2	1.0
29	1772	67	1839	2073	154	2227	4.4	0.2	5.2	0.4	5.6
30	602	36	638	2675	190	2865	1.5	0.1	6.7	0.5	7.2
July 1	1034	33	1067	3709	223	3932	2.6	0.1	9.3	0.6	9.8
2	359	8	367	4068	231	4299	0.9	0.0	10.2	0.6	10.7
3	1070	10	1080	5138	241	5379	2.7	0.0	12.8	0.6	13.4
4	9802	50	9852	14940	291	15231	24.5	0.1	37.4	0.7	38.1
5	2818	10	2828	17758	301	18059	7.0	0.0	44.4	0.8	45.1
6	1832	13	1845	19590	314	19904	4.6	0.0	49.0	0.8	49.8
7	948	0	948	20538	314	20852	2.4	0.0	51.3	0.8	52.1
8	378	2	380	20916	316	21232	0.9	0.0	52.3	0.8	53.1
9	1274	1	1275	22190	317	22507	3.2	0.0	55.5	0.8	56.3
10	1348	11	1359	23538	328	23866	3.4	0.0	58.8	0.8	59.7
11	1490	21	1511	25028	349	25377	3.7	0.1	62.6	0.9	63.4
12	2788	23	2811	27816	372	28188	7.0	0.1	69.5	0.9	70.5
13	2049	26	2075	29865	398	30263	5.1	0.1	74.7	1.0	75.7
14	454	7	461	30319	405	30724	1.1	0.0	75.8	1.0	76.8
15	767	19	786	31086	424	31510	1.9	0.0	77.7	1.1	78.8
16	453	5	458	31539	429	31968	1.1	0.0	78.8	1.1	79.9
17	1162	23	1185	32701	452	33153	2.9	0.1	81.8	1.1	82.9
18	1113	15	1128	33814	467	34281	2.8	0.0	84.5	1.2	85.7
19	910	28	938	34724	495	35219	2.3	0.1	86.8	1.2	88.0
Post							0.0	0.0	0.0	0.0	0.0
July 19	4715	66	4781	39439	561	40000	11.8	0.2	98.6	1.4	100.0
Total	39439	561	40000	39439	561	40000	98.6	1.4	98.6	1.4	100.0

Post July 19 data reflect aerial survey estimates.

Table 55. Chinook, pink, and chum salmon daily and cumulative escapement counts through the Orzenoi weir, 1991.

Date	Daily			Cumulative		
	Chinook	Pink	Chum	Chinook	Pink	Chum
June 14	0	0	0	0	0	0
15	0	0	0	0	0	0
16	0	0	0	0	0	0
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	0	0	0	0	0
20	0	0	0	0	0	0
21	0	0	0	0	0	0
22	0	0	0	0	0	0
23	0	0	0	0	0	0
24	0	0	0	0	0	0
25	0	0	0	0	0	0
26	0	0	0	0	0	0
27	0	0	0	0	0	0
28	0	0	0	0	0	0
29	0	0	0	0	0	0
30	0	0	0	0	0	0
July 1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	1	0	0	1	0
11	0	5	0	0	6	0
12	0	2	0	0	8	0
13	0	0	0	0	8	0
14	0	0	3	0	8	3
15	0	1	1	0	9	4
16	0	4	1	0	13	5
17	0	4	13	0	17	18
18	0	1	0	0	18	18
19	0	0	0	0	18	18
Total	0	18	18	0	18	18

Post July 19 escapements listed under aerial survey counts.



Table 56. Salmon escapement survey counts in the South Peninsula, 1991.<sup>1</sup>

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
SOUTHEASTERN DISTRICT									
281-35.07	Bluff Point	05-Sep	Good	0	0	2,200	0	McCullough	300 pinks at mouth.
281-35.06	Boulder Bay	11-Aug	Good	0	0	0	0	McCullough	300 pinks at mouth, 25 pinks in lagoon.
		21-Aug	Fair	0	0	50	0	McCullough	2,000 pinks at mouth. Plus 1,100 chums in lagoon.
		05-Sep	Good	0	0	300	1,800	McCullough	Turbulent, counts may be low. Plus 4,000 chums and 900 pinks in lagoon.
281-35.05	Fox Bay	11-Aug	Good	0	0	0	0	McCullough	300 pinks at mouth, 50 pinks in lagoon.
		21-Aug	Fair	0	0	50	0	McCullough	900 pinks at mouth. Plus 800 pinks in lagoon. Turbulent, counts may be low.
		05-Sep	Good	0	0	0	0	McCullough	Survey of lagoon only. Turbulent, could not survey stream. 2,100 pinks and 2,500 chums in lagoon, plus many salmon carcasses.
281-35.04	Fox Bay	11-Aug	Good	0	0	0	0	McCullough	100 pinks at mouth, nothing in lagoon.
		21-Aug	Fair	0	0	0	600	McCullough	2,000 pinks at mouth. Turbulent, counts may be low.
		05-Sep	Good	0	0	0	1,400	McCullough	Plus 25 pinks in lagoon. Plus 200 chums in lagoon.
281-35.02	Fox Bay	11-Aug	Good	0	0	0	0	McCullough	3,000 pinks at mouth.
		21-Aug	Fair	0	0	1,100	0	McCullough	Turbulent, counts may be low.
		05-Sep	Good	0	0	15,000	0	McCullough	Plus 2,000 pinks in lagoon. Very good escapement.
281-34.08	Island Bay	11-Aug	Good	0	0	15	0	McCullough	2,000 pinks at mouth.
		21-Aug	Fair	0	0	200	0	McCullough	150 pinks at mouth. Turbulent, counts may be low.
		05-Sep	Good	0	0	600	0	McCullough	

-Continued-

Table 56. (Page 2 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
281-34.07	Island Bay	11-Aug	Good	0	0	0	0	McCullough	
		21-Aug	Fair	0	0	50	0	McCullough	250 pinks at mouth. Turbulent, counts may be low.
		05-Sep	Good	0	0	350	0	McCullough	
281-34.06	Island Bay	11-Aug	Good	0	0	0	0	McCullough	
		21-Aug	Good	0	0	150	0	McCullough	8,250 pinks at mouth. Split fish at mouth with .05.
		05-Sep	Good	0	0	4,600	0	McCullough	600 pinks at mouth. Plus 400 pinks in lagoon. Fish in lagoon and at lagoon mouth split with .05.
281-34.05	Island Bay	11-Aug	Good	0	0	0	0	McCullough	
		21-Aug	Good	0	0	600	0	McCullough	8,250 pinks at mouth. Split fish at mouth with .06.
		05-Sep	Good	0	0	6,200	0	McCullough	600 pinks at mouth. Plus 400 pinks in lagoon. Good escapement. Split fish at at lagoon and lagoon mouth with .06.
281-34.04	Unnamed	11-Aug	Good	0	0	0	0	McCullough	1,000 pinks at mouth.
		21-Aug	Good	0	0	900	0	McCullough	3,200 pinks at mouth.
		05-Sep	Good	0	0	1,300	0	McCullough	
281-34.03	Stonehouse	11-Aug	Good	0	0	0	0	McCullough	
		21-Aug	Good	0	0	4,800	0	McCullough	4,000 pinks at mouth
		05-Sep	Good	0	0	24,600	0	McCullough	4,000 pinks at mouth. Plus 2,200 pinks in lagoon. Good escapement.
281-34.02	Osterback	11-Aug	Good	0	0	1,100	0	McCullough	3,500 pinks at mouth.
		21-Aug	Good	0	0	3,500	0	McCullough	1,200 pinks at mouth.
		05-Sep	Good	0	0	28,100	0	McCullough	Of which 100 pinks above falls. 1,400 pinks at mouth.
281-34.01	Granville-Portage Inlet	04-Aug	Good	0	0	0	0	McCullough	
		11-Aug	Good	0	0	0	0	McCullough	150 pinks at mouth.
		21-Aug	Good	0	0	200	0	McCullough	Plus 500 pinks in lagoon.
		05-Sep	Good	0	0	2,900	3,000	McCullough	250 pinks at mouth. Plus 10,000 pinks in lagoon.

-Continued-

Table 56. (Page 3 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
281-33.05	Stepovak River	21-Jul	Poor	0	0	0	0	McCullough	Surveyed mouth only. 10 chums at mouth.
		25-Jul	Poor	0	0	0	0	Stopha	Surveyed mouth only. 4,000 chums at mouth. Muddy water.
		04-Aug	Poor	0	0	0	0	McCullough	Survey of mouth only. 5,000 chums at mouth. Lots of jumpers to east of river mouth, but right after survey, the F/V Oceania was reported to be stealing the fish.
		11-Aug	Poor	0	0	0	0	McCullough	Survey of mouth only. 10,000 pinks and 20,000 chums at mouth. 30,000 chums and pinks between Gull Rocks and Ramsey Bay.
		21-Aug	Fair	0	0	0	6,500	McCullough	Surveyed clear tributaries only. Fish just beginning to move upstream. Lots of jumpers at mouth.
		05-Sep	Fair	0	0	20,000	35,000	McCullough	Only a few of normal clear tributaries were clear. Where fish could be seen, escapement was excellent. Rough estimate. No jumpers in bay.
281-33.06	Stepovak Flats	21-Aug	Good	0	0	0	800	McCullough	
		05-Sep	Good	0	0	300	1,200	McCullough	
281-33.04	Big River	21-Jul	Poor	0	0	0	0	McCullough	Survey of mouth only. Muddy water.
		25-Jul	Poor	0	0	0	0	Stopha	Survey of mouth only. Muddy water.
		04-Aug	Poor	0	0	0	0	McCullough	Survey of mouth only. Muddy water.
		11-Aug	Poor	0	0	0	0	McCullough	Survey of mouth only. Muddy water.
		21-Aug	Fair	0	0	5,800	12,000	McCullough	Fish seen only in clear water tributaries. Many jumpers at mouth.
		05-Sep	Fair	0	0	16,000	13,500	McCullough	Fish seen only in clear tributaries. No jumpers in bay. Rough estimate. Very good to excellent escapement. Plus 2,000 chum carcasses.

-Continued-

Table 56. (Page 4 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
281-33.03	Louie's Corner	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only. Nothing.
		25-Jul	Good	0	0	0	0	Stopha	2 mile survey. No fish.
		04-Aug	Good	0	0	0	0	McCullough	500 chum at mouth.
		11-Aug	Good	0	0		250	McCullough	Nothing in river.
		21-Aug	Fair	0	0	0	8,800	McCullough	2,500 chum at mouth.
									Muddy water. Where fish able to be seen, good escapement.
									Muddy water, didn't survey stream.
		05-Sep	Fair	0	0	6,000	15,000	McCullough	In clear tributaries and shallows of main river, excellent escapement.
281-33.02	Ramsey Bay	25-Jul	Good	0	0	0	0	Stopha	1.5 mile survey. No fish.
		04-Aug	Good	0	0	0	0	McCullough	20 chum at mouth.
		11-Aug	Poor	0	0	0	0	McCullough	Muddy water.
		21-Aug	Poor	0	0	0	6,700	McCullough	8,000 chums at mouth.
		05-Sep	Fair	0	0	5,000	15,000	McCullough	Muddy water. Many jumpers along beach.
									Muddy water. Where fish seen in clear tributaries and shallows of main river, very good to excellent escapement, rough estimate.
281-33.01	Ramsey Bay	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only. 100 chum at mouth.
		25-Jul	Good	0	0	0	0	Stopha	3 mile survey.
		04-Aug	Good	0	0	0	0	McCullough	50 chum at mouth.
		11-Aug	Good	0	0	0	0	McCullough	100 chum at mouth.
		21-Aug	Poor	0	0	0	1,200	McCullough	Muddy water. Many jumpers along beach.
		05-Sep	Fair	0	0	6,000	10,000	McCullough	Muddy water. Where fish seen in clear tributaries and shallows of main river, very good to excellent escapement.
281-32.07	Grub Gulch	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth. Nothing.
			Good	0	0	200	0	Stopha	
		04-Aug	Good	0	0	0	0	McCullough	2,800 chum at mouth.
		11-Aug	Good	0	0	600	4,000	McCullough	500 chum at mouth.

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Table 56. (Page 5 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
281-32.07	Grub Gulch (cont.)	21-Aug	Good	0	0	28,000	3,300	McCullough	10,000 chum at mouth. lower portion of stream. Good escapement. Most still in lower portion of stream.
		05-Sep	Good	0	0	52,000	4,400	McCullough	Excellent escapement.
281-32.05	Clark Bay	21-Jul	Good	0	0	0	0	McCullough	Survey of mouth only. 30 pinks at mouth.
		25-Jul	Good	0	0	0	0	Stopha	1 mile survey. No fish.
		04-Aug	Good	0	0	0	0	McCullough	
		11-Aug	Good	0	0	0	300	McCullough	7,000 pinks at mouth.
		21-Aug	Good	0	0	10,000	2,800	McCullough	9,500 pinks at mouth. Very good escapement.
		05-Sep	Good	0	0	15,500	0	McCullough	Of which 2,100 pinks in slough to west of main river. 400 pinks at mouth.
281-32.04	Little Norway	21-Jul	Excellent	0	0	175	0	McCullough	1,200 pinks at mouth.
		25-Jul	Good	0	0	0	0	Stopha	1.5 mile survey; 2,000 pinks at mouth.
		04-Aug	Good	0	0	0	0	McCullough	80 chum at mouth.
		11-Aug	Good	0	0	2,000	4,700	McCullough	3,000 pinks at mouth.
		21-Aug	Good	0	0	12,000	4,900	McCullough	8,000 pinks at mouth. Very good escapement.
		05-Sep	Good	0	0	33,000	0	McCullough	100 pinks at mouth. Very good escapement.
281-31.03	Orzinski Lake <sup>2</sup>	25-Jul	Poor	0	0	0	0	Stopha	Survey of lake. Too choppy and too much glare to see.
		04-Aug	Good	0	0	50	0	McCullough	Survey of river and mouth only.
		11-Aug	Good	0	0	400	0	McCullough	7,000 pinks at mouth. Sockeye colored and spawning almost all along N. shore, a few at lake outlet.
		13-Aug	Good	0	0	700	0	Shaul	2,000 pinks at mouth. Survey of mouth and outlet. Grumman Goose survey.

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Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
281-31.03	Orzinski Lake (cont.)	21-Aug	Good	0	0	23,000	0	McCullough	500 pinks at mouth. Did not survey lake. Good pink escapement in stream.
		05-Sep	Good	500	0	35,000	2,000	McCullough	Survey of lake outlet only. South shore of lake now with good showing of sockeye spawners. Good escapement of all species.
281-20.04	Windbound Bay	25-Jul	Good	0	0	0	0	Stopha	1 mile survey. No fish.
		04-Aug	Good	0	0	0	0	McCullough	
		11-Aug	Good	0	0	40	0	McCullough	1,500 pinks at mouth.
		21-Aug	Good	0	0	1,400	0	McCullough	11,000 pinks at mouth.
		11-Sep	Good	0	0	400	0	McCullough	125 pinks at mouth, plus 350 pink carcasses.
281-20.03	Chichagof Stream	25-Jul	Good	0	0	0	0	Stopha	200 chum in lagoon.
		21-Aug	Good/Fair	0	0	0	2,500	McCullough	750 pinks at mouth.
281-20.02	Chichagof	04-Aug	Good	0	0	0	0	McCullough	
		11-Aug	Good	0	0	0	3,800	McCullough	3,500 pinks at mouth, 300 pinks and 2,300 chums also in lagoon.
		21-Aug	Good	0	0	17,000	0	McCullough	Very good pink escapement.
		11-Sep	Good	0	0	23,000	0	McCullough	1,500 pinks at mouth. Plus 6,000 pink and 400 chum in lagoon. Very good escapement.
281-20.01	Chichagof Bay	25-Jul	Excellent	0	0	0	2,600	McCullough	1,200 chum at mouth, fish in lagoon.
		04-Aug	Good	0	0	250	0	McCullough	270 pinks at mouth.
		11-Aug	Good	0	0	1,400	0	McCullough	3,000 pinks at mouth.
		21-Aug	Fair	0	0	4,300	0	McCullough	4,000 pinks at mouth. Survey of lower half of stream.
		11-Sep	Poor	0	0	0	0	McCullough	Muddy water. 500 pink carcasses.
281-10.04	West Cove	25-Jul	Good	0	0	0	0	Stopha	1 mile survey. No fish.
		04-Aug	Good	0	0	0	0	McCullough	300 pinks at mouth.
		11-Aug	Good	0	0	20	0	McCullough	200 pinks at mouth.
		21-Aug	Fair	0	0	1,900	0	McCullough	300 pinks at mouth. Surveyed lower half of stream.
281-10.03	Suzy Creek	21-Jul	Excellent	0	0	0	0	McCullough	500 pinks at mouth.
		24-Jul	Good	0	0	1,400	0	Shaul	

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Table 56. (Page 7 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
281-10.03	Suzy Creek (cont.)	04-Aug	Good	0	0	12,300	0	McCullough	5,000 pinks at mouth.
		11-Aug	Good	0	0	34,500	0	McCullough	3,000 pinks at mouth. Could hold twice as many.
		13-Aug	Good	0	0	41,000	0	Shaul	7,000 pinks at mouth. Grumman Goose survey.
		21-Aug	Good	0	0	49,000	0	McCullough	Of which 3,000 pinks just entered stream. 5,500 pinks at mouth.
		05-Sep	Good	0	0	17,900	0	McCullough	Most fish in lower portion of creek, plus thousands of pink carcasses.
281-10.02	Dorenoi Minor	25-Jul	Good	0	0	0	0	Stopha	1 mile survey. Nothing, low water.
		04-Aug	Good	0	0	0	0	McCullough	Stream is dry.
		11-Aug	Good	0	0	0	0	McCullough	Stream is dry.
		21-Aug	Good	0	0	250	0	McCullough	Stream now flowing, good water level.
		11-Sep	Good	0	0	1,200	0	McCullough	
281-10.01	Dorenoi Major	25-Jul	Good	0	0	0	0	Stopha	1 mile survey. Nothing, low water.
		04-Aug	Good	0	0	1,600	0	McCullough	2,500 pinks at mouth.
		11-Aug	Good	0	0	7,600	0	McCullough	6,500 pinks at mouth.
		21-Aug	Good	0	0	11,300	0	McCullough	3,000 pinks at mouth. Plus 1,500 pink carcasses. Good escapement.
		11-Sep	Good	0	0	5,400	0	McCullough	Plus 500 pink carcasses.
283-90.04	San Diego Bay	25-Jul	Good	0	0	0	10	Stopha	3,000 chum at mouth.
		04-Aug	Good	0	0	0	300	McCullough	All chums in lagoon.
		11-Aug	Good	0	0	0	150	McCullough	Plus 200 pinks in lagoon. Chums upstream.
		21-Aug	Good	0	0	1,700	0	McCullough	Plus 150 pink carcasses.
		11-Sep	Good	0	0	350	40	McCullough	Plus 250 pink and 50 chum carcasses.
283-90.04	San Diego Lagoon	21-Jul	Excellent	0	0	0	0	McCullough	410 chums at mouth.
		04-Aug	Good	0	0	0	300	McCullough	
		11-Aug	Good	0	0	0	0	McCullough	200 pinks in lagoon.
		21-Aug	Good	0	0	8,700	0	McCullough	500 pinks at mouth. 6,500 of the pinks in upper lagoon; 2,200 pinks near lagoon mouth.

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Table 56. (Page 8 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-90.03	San Diego	11-Aug	Good	0	0	200	0	McCullough	
		21-Aug	Good	0	0	1,300	0	McCullough	Plus 100 pink carcasses.
283-90.02	Rough Beach	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only. 500 pinks at mouth.
		24-Jul	Good	0	0	1,200	0	Shaul	400 pinks at mouth.
		04-Aug	Good	0	0	600	0	McCullough	8,000 pinks at mouth; low water in stream.
		11-Aug	Good	0	0	50	0	McCullough	11,000 pinks at mouth. Mouth of stream blocked.
		13-Aug	Good	0	0	1,500	0	McCullough	18,000 pinks at mouth. Stream open at high tide since we dug it out yesterday.
		21-Aug	Good	0	0	1,300	0	McCullough	8,000 pinks at mouth. Stream mouth blocked again. Plus 200 pink carcasses. Minimum escapement.
283-90.01	Swedania Point	05-Sep	Good	0	0	11,400	0	McCullough	Good escap. considering mouth was blocked for most of run.
		21-Jul	Good	0	0	0	0	McCullough	Survey of mouth only. 300 pinks at mouth.
		24-Jul	Good	0	0	500	0	McCullough	500 pinks at mouth.
		04-Aug	Good	0	0	30	0	McCullough	600 pinks at mouth. Very low water level in stream.
		11-Aug	Good	0	0	4,300	0	McCullough	200 pinks at mouth. Low water in stream.
		21-Aug	Fair	0	0	4,750	0	McCullough	1,200 pinks at mouth. May have missed some in lower portion of stream. Plus 50 carcasses. Good escapement.
283-80.16	Ballast	05-Sep	Good	0	0	30,700	0	McCullough	Good escapement.
		11-Aug	Good	0	0	0	0	Stopha	Low water, nothing. 3 mile survey.
		21-Aug	Good	0	0	0	0	Stopha	Nothing, 1.5 mile survey.

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Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-80.15	Coleman	04-Aug	Good	0	0	125	0	McCullough	Many jumpers in Albatros Anchorage.
		11-Aug	Good	0	0	1,380	0	Stopha	Of which 1,000 pinks just above mouth.
		17-Aug	Good	0	0	200	600	Shaul	Nothing in stream or flats.
		22-Aug	Good	0	0	200	0	Stopha	
		11-Sep	Good	0	0	9,500	0	McCullough	3,000 pinks at mouth.
283-80.14	Johnson	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only. 10 chums.
		04-Aug	Good	0	0	0	250	McCullough	500 pinks at mouth.
		11-Aug	Good	0	0	10,000	0	Stopha	3,500 pinks at mouth.
		17-Aug	Good	0	0	15,000	200	Shaul	4,000 chums at mouth. Plus 6,000 chums east of stream mouth.
		22-Aug	Good	0	0	3,600	0	Stopha	3.5 mile survey. Hard to see at mouth. Jumpers at mouth.
		11-Sep	Good	0	0	10,500	0	McCullough	Plus 3,000 pink carcasses.
283-80.12	Foster's Camp	04-Aug	Good	0	0	0	0	McCullough	10,000 pinks at mouth.
		11-Aug	Good	0	0	0	200	Stopha	Low water in stream.
		22-Aug	Poor	0	0	0	0	Stopha	Low water.
		11-Sep	Good	0	0	800	0	McCullough	Poor viewing conditions due to glare. Plus 300 pink carcasses.
283-80.11	Monolith Point	04-Aug	Good	0	0	0	0	McCullough	Low water.
		11-Aug	Good	0	0	0	200	Stopha	Low water.
		22-Aug	Poor	0	0	0	0	Stopha	Poor viewing due to glare.
		11-Sep	Good	0	0	500	0	McCullough	Plus 600 pink carcasses.
283-80.09	Foster's Creek	21-Jul	Good	0	0	0	0	McCullough	Survey of mouth only. 6,000 pinks at mouth.
		25-Jul	Good	0	0	0	0	Stopha	Jumpers at mouth.
		04-Aug	Good	0	0	1,800	0	McCullough	3,500 pinks at mouth. Low water. Muddy at bottom.
		11-Aug	Fair	0	0	8,400	4,000	Stopha	Missed some fish.
		17-Aug	Good	0	0	22,000	7,000	Shaul	5,000 pinks and 10,000 chum at mouth.
		22-Aug	Poor	0	0	5,000	650	Stopha	4,000 pinks at mouth. 600 carcasses. Jumpers east of mouth. Poor conditions due to glare.
		11-Sep	Good	0	0	6,000	0	McCullough	Plus 3,000 pinks and 4,000 chum carcasses.

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Table 56. (Page 10 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-80.08	Lefthand Bay	21-Jul	Good	0	0	0	0	McCullough	Survey of mouth only. 5 chum.
		25-Jul	Good	0	0	0	0	Stopha	Survey of mouth only. Jumpers between .08 and .09.
		04-Aug	Good	0	0	8,500	2,000	McCullough	14,000 pinks at mouth. Many more salmon in Lefthand Bay, but after survey got reports that F/V Debbie O stole a load of fish from bay.
		11-Aug	Fair	0	0	5,400	6,000	Stopha	
		17-Aug	Good	0	0	16,000	7,000	Shaul	6,000 pinks at mouth. Most chums in lower portion of stream.
		22-Aug	Poor	0	0	4,000	400	Stopha	Poor conditions due to glare.
		11-Sep	Good	0	0	2,500	800	McCullough	Plus 300 pink carcasses.
283-80.06	Cape Aliaksin East	11-Aug	Good	0	0	5,000	0	Stopha	2,000 pinks at mouth, low water.
		13-Aug	Good	0	0	3,200	0	McCullough	Could use more in stream, those at mouth would give good escapement.
		22-Aug	Good	0	0	3,500	0	Stopha	
		11-Sep	Good	0	0	2,100	0	McCullough	Plus 2,100 pink carcasses.
283-80.05	Cape Aliaksin Center	11-Aug	Good	0	0	1,300	0	Stopha	Low water.
		13-Aug	Good	0	0	400	0	McCullough	2,500 pinks at mouth, low water.
		22-Aug	Good	0	0	1,000	0	Stopha	2,000 pinks at mouth.
		11-Sep	Good	0	0	700	0	McCullough	Plus 100 pink carcasses.
283-80.04	Cape Aliaksin West	11-Aug	Good	0	0	13,000	0	Stopha	Of which 3,000 just inside mouth.
		13-Aug	Good	0	0	10,500	0	McCullough	250 pinks at mouth. Good escapement.
		22-Aug	Good	0	0	6,000	0	Stopha	3,000 pinks at mouth.
		11-Sep	Good	0	0	1,200	0	McCullough	Plus 150 pink carcasses.
282-13.01	Unga Spit	25-Jul	Good	0	0	0	0	Stopha	1 mile survey. No fish, low water.
		22-Aug	Poor	0	0	0	0	Stopha	Muddy water.

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Table 56. (Page 11 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
282-13.02	Dry Lagoon	25-Jul	Good		0	0	350	Stopha	2.5 mile survey. All in lower river.
		04-Aug	Good	0	0	0	6,300	McCullough	Most in lower river but a few moving up.
		11-Aug	Fair	0	0	3,100	50	Stopha	Hard to see fish.
		22-Aug	Good	0	0	5,000	0	Stopha	
		11-Sep	Good	0	300	1,100	0	McCullough	Plus 400 pink carcasses.
282-13.03	Bay Point	25-Jul	Good	0	0	4,000	0	Stopha	3.5 mile survey. Unsure of species surveyed.
		04-Aug	Good	0	0	0	9,800	McCullough	100 chums at mouth; low water; most fish in stream but some to forks.
		11-Aug	Good	0	0	24,800	0	Stopha	7,000 pinks at mouth.
		17-Aug	Good	0	0	47,000	800	Shaul	Plus 500 chums in lagoon.
		22-Aug	Good	0	0	10,400	0	Stopha	Hard to see in upper river.
		11-Sep	Good	0	40	2,500	0	McCullough	Plus 400 pink carcasses.
282-13.04	Pinnacle Point	04-Aug	Good	0	0	0	0	McCullough	
		11-Aug	Good	0	0	100	0	Stopha	Very low water.
		22-Aug	Good	0	0	200	0	Stopha	All near mouth.
		11-Sep	Good	0	125	1,900	0	McCullough	
282-13.05	Unnamed	11-Sep	Good	0	0	200	0	McCullough	
282-10.02	Apollo Minor	04-Aug	Good	0	0	0	0	McCullough	Dead whale at mouth.
		11-Aug	Good	0	0	900	0	Stopha	Dead whale blocking stream.
		13-Aug	Good	0	0	200	0	McCullough	
		17-Aug	Good	0	0	1,500	0	Shaul	
		22-Aug	Good	0	0	1,400	0	Stopha	
		05-Sep	Good	0	0	4,500	0	McCullough	Could use more escapement.
282-10.03	Apollo Creek	04-Aug	Good	0	0	2,700	0	McCullough	Could not see mouth due to breakers.
		11-Aug	Good	0	0	3,500	0	Stopha	
		13-Aug	Excellent	0	0	900	0	McCullough	
		17-Aug	Good	0	0	3,200	0	Shaul	
		22-Aug	Good	0	0	6,500	0	Stopha	
		05-Sep	Good	0	0	13,400	0	McCullough	150 pinks at mouth. Good escapement.

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Stream Number	Stream Name/Location	Date	Survey Condition	Species			Chum	Observer	Remarks
				Sockeye	Coho	Pink			
282-10.04	Acheredin Lake	25-Jul	Good	825	0	0	0	Stopha	Probably more; poor visibility due to glare and chop.
		04-Aug	Good	3,250	0	0	0	McCullough	Breakers at stream mouth.
		11-Aug	Good	1,200	0	0	0	Stopha	Partial survey of lake.
		22-Aug	Good	300	0	0	0	Stopha	Reds spawning.
282-10.10	Unnamed	04-Aug	Fair	0	0	0	0	McCullough	Nothing
		11-Aug	Good	0	0	0	0	Stopha	Nothing
		22-Aug	Good	0	0	0	0	Stopha	Nothing
282-10.11	Apollo Gold Mine	25-Jul	Good	0	0	0	0	Stopha	Nothing, low water.
		04-Aug	Good	0	0	300	0	McCullough	
		11-Aug	Good	0	0	8,400	0	Stopha	
		13-Aug	Excellent	0	0	800	0	McCullough	20 pinks at mouth. All in upper stream.
		17-Aug	Good	0	0	12,000	0	Shaul	
		22-Aug	Good	0	0	11,000	0	Stopha	All in lower river. 4,000 pinks between .11 and .12.
		05-Sep	Good	0	0	8,600	0	McCullough	1,100 pinks at mouth.
282-10.12	Unga Cape	04-Aug	Good	0	0	200	0	McCullough	1,300 pinks at mouth, jumpers in bay.
		13-Aug	Excellent	0	0	0	0	McCullough	
		22-Aug	Good	0	0	0	0	Stopha	Survey of mouth only. See .11 remarks.
		05-Sep	Good	0	0	5,300	0	McCullough	
282-10.13	Baralof Bay	25-Jul	Good	0	0	0	0	Stopha	1.5 mile survey.
		04-Aug	Good	0	0	0	0	McCullough	Someone has opened stream.
		11-Aug	Good	0	0	0	0	Stopha	May have missed fish in lower river, very low water.
		22-Aug	Good	0	0	3,500	0	Stopha	Plus as many carcasses.
282-10.14	Squaw Harbor Minor	04-Aug	Good	0	0	100	0	McCullough	Jumpers in bay.
		11-Aug	Good	0	0	20	0	Stopha	Hard to see through brush.
		17-Aug	Good	0	0	800	0	Shaul	3,000 pinks at mouth.
		22-Aug	Good	0	0	1,000	0	Stopha	Plus 5,000 carcasses in stream and at mouth.
		05-Sep	Good	0	0	18,300	0	McCullough	Very good escapement.

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Table 56. (Page 13 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
282-10.15	Squaw Harbor Major	11-Aug	Good	0	0	8,600	0	Stopha	
		15-Aug	Good	0	0	18,000	0	Shaul	5,000 pinks at mouth.
		05-Sep	Good	0	0	53,000	0	McCullough	Fish still schooled in lower river.
282-10.16	Ben Green Bight	25-Jul	Good	0	0	0	0	Stopha	10,000 pinks at mouth, low water.
		04-Aug	Good	0	0	200	0	McCullough	1,550 pinks at mouth, low water.
		11-Aug	Good	0	0	2,200	0	Stopha	6,000 pinks at mouth.
		17-Aug	Good	0	0	4,400	0	Shaul	2,000 pinks along beach.
		22-Aug	Good	0	0	1,400	0	Stopha	4,000 pinks at mouth.
		11-Sep	Good	0	0	7,700	0	McCullough	Plus 500 pink carcasses.
282-10.17	Sandy Beach	11-Aug	Good	0	0	0	0	Stopha	Nothing.
282-12.10	Unnamed	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only. 100 pinks and 500 chums.
		04-Aug	Good	0	0	0	0	McCullough	
		11-Aug	Fair	0	0	10	0	Stopha	Hard to see-murky water.
		22-Aug	Good	0	0	0	0	Stopha	Surveyed bay only. 3,100 pinks in bay.
282-12.09	South Quartz Point	21-Jul	Excellent	0	0	0	0	McCullough	3,000 pinks at mouth, survey of mouth only.
		04-Aug	Good	0	0	0	0	McCullough	
		11-Aug	Good	0	0	1,000	0	Stopha	
282-12.08	South Quartz Point	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only. 750 pinks and 50 chums.
		04-Aug	Good	0	0	0	0	McCullough	100 chum carcasses.
		11-Aug	Good	0	0	1,000	0	Stopha	200 pinks at mouth.
282-12.07	Zachary Bay	21-Jul	Excellent	0	0	0	0	McCullough	25 pinks at mouth, surveyed mouth only.
		04-Aug	Good	0	0	0	0	McCullough	100 chum carcasses.
		11-Aug	Fair	0	0	200	0	Stopha	3,000 pinks at mouth.
		11-Sep	Good	0	0	0	0	McCullough	Survey of Zachary Bay only. 900 pinks in bay, lots of carcasses, especially around .04, .05, .06, and .07.
282-12.06	Zachary Bay	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only.
		04-Aug	Good	0	0	0	0	McCullough	

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Table 56. (Page 14 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
282-12.05	Zachary Bay	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only. Nothing.
		04-Aug	Good	0	0	0	0	McCullough	2,500 chum carcasses.
		11-Aug	Good	0	0	3,300	0	Stopha	10,000 pinks at mouth, many carcasses.
282-12.04	Zachary Bay	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only. 5,000 pinks.
		04-Aug	Good	0	0	0	0	McCullough	4,500 pinks at mouth, 1,000 chum carcasses.
		11-Aug	Good	0	0	1,000	0	Stopha	
282-12.03	Zachary Bay	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only. 10 pinks.
		04-Aug	Good	0	0	0	0	McCullough	25 chum and 200 pink carcasses.
		11-Aug	Fair	0	0	200	0	Stopha	Didn't get a good look at stream
282-12.02	Zachary Bay	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only. 70 pinks.
		04-Aug	Good	0	0	0	0	McCullough	50 chum carcasses.
		11-Aug	Good	0	0	3,000	0	Stopha	3,500 pinks at mouth.
282-12.01	Zachary Bay	21-Jul	Excellent	0	0	0	0	McCullough	Survey of mouth only. Nothing.
		04-Aug	Good	0	0	0	0	McCullough	
		11-Aug	Good	0	0	0	0	Stopha	2,500 chums at mouth. Jumpers at mouth. Hard to see through brush.
282-10.18	Humbolt Creek	04-Sep	Good	0	10	1,100	0	McCullough	Survey from road to lagoon. Foot survey. Plus 150 pink and 2 coho carcasses.
		05-Sep	Good	0	0	1,400	0	McCullough	Of which 200 pinks just above lake. Nothing in lake. 1,200 pinks below road, plus 150 pinks in lagoon, plus 200 pink carcasses.
282-11.01	Salmon Ranch	11-Aug	Good	0	0	175	0	McCullough	2,500 pinks at mouth.
		17-Aug	Good	0	0	1,200	0	Shaul	1,500 pinks at mouth.
		22-Aug	Good	0	0	100	0	Stopha	4,000 pinks at mouth.
		05-Sep	Good	0	0	2,600	0	McCullough	

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Table 56. (Page 15 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
282-11.03	Fox Hole	11-Aug	Good		0	275	0	McCullough	50 pinks at mouth, plus 125 chum carcasses in lagoon.
		22-Aug	Good	0	0	0	0	Stopha	8,000 pinks at mouth, 50 bison on mudflats at mouth.
		05-Sep	Good	0	0	1,900	0	McCullough	Plus 2,000 pinks in lagoon, good escapement.
282-11.06	Korovin Island	11-Aug	Good	15	0	0	0	McCullough	Salmon in center of lake.
		22-Aug	Good	0	0	0	0	Stopha	Log jam in creek.
282-20.00	Sanborn Harbor	Not Surveyed							
282-20.03	Sanborn Harbor	Not Surveyed							
282-20.04	Sanborn Harbor	Not Surveyed							
282-20.05	Falmouth Harbor	Not Surveyed							
SOUTH CENTRAL DISTRICT									
283-70.06	Kagayan Flats	Not surveyed.							
283-70.05	Beaver River	25-Jul	Excellent	0	0	0	7,500	McCullough	Mouth muddy, excellent in river.
		04-Aug	Good	0	0	8,000	11,000	McCullough	Good escapement, could hold more.
		11-Aug	Good	0	0	16,700	0	Stopha	
		22-Aug	Fair	0	0	3,600	0	Stopha	Muddy in lower river, two sealions at mouth.
		11-Sep	Fair	0	0	0	1,000	McCullough	Plus 1,400 chum carcasses.
283-70.04	Smiley's	04-Aug	Good	0	0	500	0	McCullough	250 pinks at mouth.
		11-Aug	Good	0	0	5,500	0	Stopha	Of which 3,000 just inside mouth. 20,000 chum off mouth to north.
		17-Aug	Good	0	0	1,600	0	Shaul	
		22-Aug	Good	0	0	4,700	0	Stopha	Of which 3,000 just inside mouth.
		11-Sep	Good	0	0	1,700	0	McCullough	Plus 1,100 pink carcasses.

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Table 56. (Page 16 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-70.03	McGinty Point	26-Jul	Good	0	0	100	0	Shaul	
		01-Aug	Good	0	0	800	0	Shaul	
		10-Aug	Good	0	0	6300	0	Shaul	
		04-Sep	Good	0	0	12,000	0	Shaul	
283-70.02	East of Mino	26-Jul	Good	0	0	1,000	0	Shaul	1,000 pinks at mouth.
		01-Aug	Good	0	0	12,700	0	Shaul	500 pinks at mouth.
		10-Aug	Good	0	0	100,500	0	Shaul	
		04-Sep	Good	0	0	30,000	0	Shaul	
283-70.01	Mino Creek	18-Jul	Good	0	0	20,000	400	Shaul	100 chums at mouth. All except 1,500 were below east fork, needs rain.
		21-Jul	Good	0	0	35,000	900	Berceli	300 pinks, 150 chums at mouth. Big schools in pools.
		26-Jul	Good	0	0	83,600	0	Shaul	
		29-Jul	Good	0	0	157,000	1,000	Shaul	10,000 pinks at mouth. Looks good.
		10-Aug	Good	0	0	463,000	0	Shaul	Absolutely loaded. Another 25-30,000 dead in lower end, probably from lack of oxygen during dry period.
		04-Sep	Good	1,400	0	88,000	100	Shaul	750 sockeye in F Lake, 650 sockeye in D Lake, chums spawning in slough 1/4 mi. above mouth.
283-62.05	Coal Bay Major	18-Jul	Good	0	0	0	0	Shaul	No fish, needs rain.
		21-Jul	Good	0	0	300	0	Berceli	4,000 at mouth.
		26-Jul	Good	0	0	1,200	0	Shaul	
		29-Jul	Good	0	0	2,100	0	Shaul	40,000 pinks at mouth.
		01-Aug	Good	0	0	7,800	0	Shaul	20,000 pinks at mouth, needs rain bad.
		05-Aug	Good	0	0	27,700	0	Shaul	15,000 pinks at mouth. A large number of fish along beach and in deep, 2 boats.
		10-Aug	Good	0	0	132,000	0	Shaul	5,000 pinks at mouth. Loaded. Good water flow due to rain during past 2 days.
		03-Sep	Good	0	0	7000	0	Berceli	

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Table 56. (Page 17 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-62.04	Coal Bay Minor	18-Jul	Good	0	0	0	0	Shaul	Nothing
		21-Jul	Good	0	0	200	0	Berceli	100 at mouth.
		26-Jul	Good	0	0	1,400	0	Shaul	
		29-Jul	Good	0	0	3,400	0	Shaul	
		01-Aug	Good	0	0	2,700	0	Shaul	8,000 pinks at mouth.
		05-Aug	Good	0	0	5,300	0	Shaul	7,000 pinks at mouth.
		10-Aug	Good	0	0	31,700	0	Shaul	Loaded.
		03-Sep	Good	0	0	3,400	0	Berceli	
283-62.03	Coal Bay Middle	03-Sep	Poor	0	0	0	0	Berceli	White water all the way, could only see a few carcasses.
283-62.02	Coal Bay	03-Sep	Good	0	0	75	0	Berceli	High water.
283-62.01	Cape Tolstoi	03-Sep	Good	0	0	900	0	Berceli	
283-63.16	Settlement Point	07-Jul	Good	0	0	200	0	Shaul	
		18-Jul	Good	0	0	4,600	0	Shaul	1,000 pinks at mouth, needs rain.
		21-Jul	Good	0	0	4,700	0	Berceli	7,000 pinks and 200 chums at mouth.
		24-Jul	Good	0	0	39,000	0	Shaul	7,000 pinks at mouth. 25,000 above forks. Didn't survey right fork. Cherokee survey.
		26-Jul	Excellent	0	0	35,700	0	Shaul	
		29-Jul	Good	0	0	77,000	0	Shaul	20,000 pinks at mouth. 1,500 in right fork, 34,000 below forks.
		01-Aug	Good	0	0	83,500	0	Shaul	2,000 pinks at mouth. 7 purse seiners and 3 beach seiners.
		05-Aug	Good	0	0	107,500	0	Shaul	64,500 above forks, 9 purse seiners and no beach seiners.
		09-Aug	Good	0	0	44,000	0	Shaul	2 mi. Grumman Goose survey, good water flow.
		10-Aug	Good	0	0	186,900	0	Shaul	4,000 pinks at mouth.
		03-Sep	Good	0	0	24,900	4,000	Berceli	Chums schooled in pockets in lower end.

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Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-63.15	Middle Creek	18-Jul	Good	0	0	1,500	0	Shaul	
		21-Jul	Good	0	0	2,300	0	Berceli	100 at mouth.
		24-Jul	Good	0	0	10,000	0	Shaul	3,000 pinks at mouth, Cherokee survey.
		29-Jul	Good	0	0	44,000	0	Shaul	4,000 pinks at mouth, looks good.
		10-Aug	Good	0	0	139,000	0	Shaul	Loaded.
		03-Sep	Good	0	0	8,000	0	Berceli	Many additional carcasses.
283-64.10	Ness Creek	10-Aug	Good	0	0	3,500	0	Shaul	2,000 pinks at mouth.
		04-Sep	Good	0	0	2,300	0	Shaul	100 pinks at mouth.
283-64.09	Inner Canoe Bay	10-Aug	Good	0	0	0	0	Shaul	2,000 chums at mouth, nothing in creek.
		04-Sep	Good	0	0	0	600	Shaul	300 chums at mouth, plus several hundred additional carcasses.
283-64.08	Entrance Creek	29-Jul	Good	0	0	300	0	Shaul	
		10-Aug	Good	0	0	9,300	300	Shaul	4,000 chums at mouth.
		04-Sep	Good	0	0	3,500	1,500	Shaul	500 chums at mouth.
283-64.	Wolverine Gulch	04-Sep	Good	0	0	1,300	0	Shaul	Plus as many carcasses.
283-64.06	Canoe Bay River	07-Jul	Good	0	0	0	1,000	Shaul	Some could have been reds. Saw no fish in bay or at mouth, but several seals on north side.
		18-Jul	Good	200	0	0	12,000	Shaul	Saw none at mouth, 4,000 off Bluff Pt. creek.
		21-Jul	Good	0	0	0	19,850	Berceli	16,700 in Inner Bay.
		29-Jul	Excellent	800	0	0	24,200	Shaul	17,000 chums at mouth, additional 16,000 chums in Inner Bay, including 5,000 off Bluff Pt. Cr.
		01-Aug	Good	1,600	0	200	23,000	Shaul	21,000 chums at mouth. Surveyed 3/4 of the way up.
									14,000 chums in Inner Bay including those off Bluff Pt. Cr., 5,000: Probably 3-4,000 chums above.
		10-Aug	Good	300	0	600	68,000	Shaul	14,000 chums at mouth, additional 10,000 chums in Inner Bay not included off other creek mouths.
		04-Sep	Good	400	0	2,500	7,500	Shaul	1,100 pinks and 800 chums were in Four Bear.

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Table 56. (Page 19 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-64.05	Bluff Point	29-Jul	Good	0	0	300	0	Shaul	5,000 chums at mouth.
		10-Aug	Good	0	0	4,300	2,600	Shaul	4,000 chums at mouth.
		04-Sep	Good	0	0	900	1,200	Shaul	
283-63.14	Dry Lagoon	Not Surveyed							
283-63.13	Ruby's Lagoon	17-Aug	Good	0	0	0	7,000	Shaul	Survey of lagoon.
		03-Sep	Good	0	0	0	500	Berceli	1,700 chums in lagoon.
283-63.11	Chinaman Lagoon North	17-Aug	Good	0	0	0	2,400	Shaul	Survey of lagoon.
		03-Sep	Good	0	0	0	0	Berceli	2,900 in lagoon.
283-63.10	Chinaman Lagoon Main	17-Aug	Good	0	0	0	3,100	Shaul	Survey of lagoon.
		03-Sep	Good	0	0	0	0	Berceli	3,000 chums in lagoon.
283-63.09	Chinaman Lagoon	03-Sep	Good	0	0	0	0	Berceli	See 63.10.
283-63.06	Chinaman Lagoon South	17-Aug	Good	0	0	0	0	Shaul	See 63.05.
		03-Sep	Good	0	0	0	500	Berceli	6,000 chums in lagoon.
283-63.05	Lower Chinaman Lagoon	17-Aug	Good	0	0	0	1,300	Shaul	Survey of lagoon.
		03-Sep	Good	0	0	0	200	Berceli	See remarks under 63.06.
283-63.04	Chinaman Stream South	17-Aug	Good	0	0	0	400	Shaul	
		03-Sep	Good	0	0	0	60	Berceli	
283-61.05	Long John Lagoon	10-Sep	Good	0	1,100	0	0	Shaul	
283-61.04	Spring Fed Lakes	01-Aug	Good	450	0	0	0	Shaul	3-400 chums in lagoon.
		03-Sep	Good	0	0	0	1,100	Berceli	In lagoon, lower end.
283-61.03	Long John Lagoon	Not surveyed.							
283-61.02	Southwest Stream	03-Sep	Good	0	0	300	50	Berceli	No chums at head of springs.
		10-Sep	Good	0	0	0	8,000	Shaul	4,300 chums in lagoon.

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Table 56. (Page 20 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
SOUTHWESTERN DISTRICT									
283-52.10	Dushkin Lagoon	Not surveyed.							
283-52.08	Volcano River	10-Aug	Good	0	0	1,500	1,000	Shaul	1,000 chums at mouth.
		17-Aug	Good	0	0	500	700	Shaul	
		03-Sep	Good	0	0	1,500	5,800	Berceli	1,400 at mouth.
		04-Sep	Good	0	0	0	15,000	Shaul	Roughly 10,000 on flats, large number of additional chums in deep water.
283-52.07	Volcano Center Sloughs	10-Aug	Good	0	0	400	300	Shaul	Mouth too choppy.
		16-Aug	Good	0	0	3,500	100	Shaul	East pond and flats too choppy.
		03-Sep	Good	0	0	500	400	Berceli	1,500 chum at mouth.
		10-Sep	Good	0	0	0	10,000	Shaul	20,000 chums on flats.
283-52.06	West Springholes	10-Aug	Good	0	0	500	0	Shaul	Mouth too choppy.
		16-Aug	Good	0	0	1,400	0	Shaul	Only able to survey left clear tributary, rest muddy. Bay choppy.
		03-Sep	Good	0	0	3,600	1,500	Berceli	2,000 chums at mouth.
		10-Sep	Good	0	0	10,000	5,000	Shaul	10,000 chums on flats.
283-52.05	Streamguard Creek	03-Sep	Good	0	0	450	0	Berceli	
		10-Sep	Good	0	0	2,000	0	Shaul	
283-52.04	Stub Creek	16-Aug	Good	0	0	0	0	Shaul	
		03-Sep	Good	0	0	1,700	0	Berceli	100 at mouth.
283-52.03	Little Bear Bay	05-Aug	Good	0	0	0	0	Shaul	Creek dry, 2,000 chums, 500 pinks in inner bay.
		03-Sep	Good	0	0	2,400	400	Berceli	600 chum(?) at mouth.
283-52.01	Nikolaski Spit	29-Jul	Good	0	0	0	0	Shaul	1,500 pinks at mouth, water level desperately low.
		05-Aug	Good	0	0	0	0	Shaul	2,000 pinks at mouth, 4-5,000 in front of stream 500 yards to south.
		10-Aug	Good	0	0	10,700	0	Shaul	Mouth too choppy. Dramatic improvement in water flow.
		02-Sep	Good	0	0	200	0	Berceli	100 at mouth. All white water.

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Table 56. (Page 21 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-51.03	Dolgoi Harbor Southwest	17-Aug	Good	0	0	0	0	Shaul	Nothing
		03-Sep	Good	0	0	500	0	Berceli	
283-51.06	Dolgoi Harbor Southwest	26-Jul	Good	0	0	0	0	Shaul	2,000 pinks at mouth.
		01-Aug	Good	0	0	0	0	Shaul	3,000 pinks at mouth.
		10-Aug	Good	0	0	3,200	0	Shaul	4,000 pinks at mouth.
		17-Aug	Good	0	0	6,100	0	Shaul	5,000 pinks at mouth, looks good.
		03-Sep	Good	0	0	1,700	0	Berceli	500 at mouth.
283-51.05	Dolgoi Harbor South	03-Sep	Good	0	0	100	0	Berceli	70 at mouth.
283-41.01	Belkofski Village	26-Jul	Good	0	0	200	300	Shaul	200 pinks at mouth.
		01-Aug	Good	0	0	300	300	Shaul	1,000 pinks at mouth.
		05-Aug	Good	0	0	5,500	0	Shaul	2,000 pinks at mouth.
		10-Aug	Good	0	0	9,000	0	Shaul	
		13-Aug	Good	0	0	21,000	0	Shaul	Grumman Goose survey.
		17-Aug	Good	0	0	13,800	0	Shaul	
		03-Sep	Good	0	0	5,300	0	Berceli	
283-42.12	Rocky River	26-Jul	Good	0	0	0	0	Shaul	5,000 pinks at mouth.
		01-Aug	Good	0	0	300	0	Shaul	7,000 pinks at mouth, desperately needs rain.
		05-Aug	Good	0	0	800	0	Shaul	5,000 pinks at mouth.
		10-Aug	Good	0	0	10,200	0	Shaul	
		13-Aug	Good	0	0	19,000	0	Shaul	3,000 pinks at mouth, Grumman Goose survey.
		17-Aug	Good	0	0	15,000	0	Shaul	Below canyon, probably another 4-5,000 above. Additional
		02-Sep	Good	0	0	2,700	0	Berceli	1,000 pinks at mouth.
283-42.10	Kitchen Anchorage	10-Aug	Good	0	0	0	0	Shaul	5-10,000 along beach, 5 boats.
		13-Aug	Good	0	0	100	0	Shaul	1,000 pinks at mouth, 5,000 pinks along beach.
		02-Sep	Good	0	0	7,700	0	Berceli	9,000 at mouth and along beach.
283-42.09	Captain's Harbor	10-Aug	Good	0	0	100	0	Shaul	400 chums in harbor, choppy.
		02-Sep	Good	0	0	300	0	Berceli	100 chums at mouth, 1,800 chums on flats.

-Continued-

Table 56. (Page 22 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-42.07	Belkofski Bay River	17-Aug	Good	0	0	400	2,500	Shaul	Could only see 300 chums in Captain's Harbor, fair visibility in lower river, excellent above 1st tributary.
		03-Sep	Good	0	0	2,500	8,500	Berceli	
		10-Sep	Good	0	0	0	24,000	Shaul	
283-42.06	Belkofski Bay Beach	10-Aug	Good	0	0	100	0	Shaul	
		17-Aug	Good	0	0	600	0	Shaul	
		03-Sep	Good	0	0	800	0	Berceli	
283-42.05	Belkofski Bay, West	10-Aug	Good	0	0	700	0	Shaul	Poor light, bay too choppy.
		17-Aug	Poor	0	0	2,500	0	Shaul	
		03-Sep	Good	0	0	1,300	0	Berceli	
283-42.03	Indian Head	16-Aug	Good	0	0	5,000	0	Shaul	4,000 pinks at mouth. 800 at mouth.
		03-Sep	Good	0	0	8,500	0	Berceli	
283-33.05	Rau's Creek	17-Aug	Good	0	0	6,000	300	Shaul	3,000 above culvert, 3,000 pinks at mouth.
		30-Aug	Good	0	0	24,000	0	Shaul	
		03-Sep	Good	0	0	7,000	0	Berceli	
283-33.04	King Cove Lagoon	10-Sep	Good	0	0	0	100	Shaul	Roughly 2,000 chums in upper end of lagoon.
283-33.03	King Cove	10-Sep	Good	0	0	0	300	Shaul	
283-31.01	Fox Island Anchorage East	23-Jul	Good	0	0	0	0	Berceli	Water low. 8,000 at mouth, needs rain. 3,000 pinks at mouth. Good water flow, Grumman Goose. Big improvement over last night. Additional 3,000 pinks at mouth.
		01-Aug	Good	0	0	0	0	Shaul	
		05-Aug	Good	0	0	1,100	0	Shaul	
		09-Aug	Good	0	0	5,500	0	Shaul	
		10-Aug	Good	0	0	17,600	0	Shaul	
		03-Sep	Good	0	0	10,000	0	Berceli	
283-31.02	Fox Island Anchorage Center	23-Jul	Good	0	0	0	0	Berceli	Water low. 4,000 pinks at mouth. 2,000 pinks at mouth. Grumman Goose. 3,000 pinks at mouth. Water high.
		01-Aug	Good	0	0	0	0	Shaul	
		05-Aug	Good	0	0	0	0	Shaul	
		09-Aug	Good	0	0	1,000	0	Shaul	
		10-Aug	Good	0	0	2,000	0	Shaul	
		03-Sep	Good	0	0	500	0	Berceli	

-Continued-

Table 56. (Page 23 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Chum	Pink	Chum		
283-31.03	Fox Island Anchorage West	23-Jul	Good	0	0	0	0	Berceli	Water level low.
		01-Aug	Good	0	0	100	0	Shaul	Fish reported stolen from mouth.
		05-Aug	Good	0	0	5,700	0	Shaul	4,000 pinks at mouth.
		09-Aug	Good	0	0	15,000	0	Shaul	Surveyed lower 3/4 of stream.
									Probably another 2-4,000 above.
									Grumman Goose.
		10-Aug	Good	0	0	35,100	0	Shaul	10,000 pinks at mouth, looks good.
		03-Sep	Good	0	0	3,300	0	Berceli	
283-31.05	Paw Cape Creek	23-Jul	Good	0	0	0	0	Berceli	Low water level.
		10-Aug	Good	0	0	2,000	0	Shaul	
		03-Sep	Good	0	0	3,900	0	Berceli	
283-31.06	Southern Creek	23-Jul	Good	0	0	24,000	0	Berceli	Water level low, most fish mid-stream, several sea lions at mouth.
		26-Jul	Good	0	0	91,000	0	Shaul	3,000 pinks at mouth, turned back 3/4 way up due to turbulence, probably another 5 - 10,000. Looks good.
		10-Aug	Good	0	0	137,000	0	Shaul	Probably 50-60,000 additional dead from lack of oxygen during dry period.
		03-Sep	Good	0	0	20,200	0	Berceli	Water high, lower section murky.
283-31.10	Eastern Creek	23-Jul	Good	0	0	11,000	0	Berceli	Fish well distributed throughout stream.
		01-Aug	Good	0	0	20,700	0	Shaul	Good escapement. Additional 10,000 pinks at mouth.
		05-Aug	Good	0	0	70,000	0	Shaul	5,000 pinks at mouth.
		03-Sep	Good	0	0	1,100	0	Berceli	Additional 50 pinks at mouth.
283-34.11	Lenard Harbor South	03-Sep	Good	0	0	2,500	0	Berceli	400 pinks at mouth, 800 carcasses in stream.
283-34.10	Lenard Harbor Main	21-Aug	Poor	0	0	2,500	1,000	Shaul	Grumman Goose. Murky water.
		03-Sep	Good	0	0	3,800	1,400	Berceli	2,800 chums at mouth.
		12-Sep	Good	0	0	0	8,000	Shaul	

-Continued-

Table 56. (Page 24 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-34.09	Barney's Creek	10-Aug	Good	0	0	7,200	0	Shaul	2,500 pinks at mouth, looks decent.
		16-Aug	Good	0	0	21,000	0	Shaul	5,000 pinks at mouth, looks good.
		02-Sep	Good	0	0	16,000	0	Berceli	Thousands of carcasses off mouth, perhaps 8,000 carcasses in stream. Additional 100 pinks at mouth.
		10-Sep	Good	0	0	0	2,500	Shaul	Survey to springs west of creek, an additional 1,500 carcasses.
283-34.07	Kinzarof Lagoon	28-Aug	Good	2,100	0	0	900	Shaul	
283-34.06	Kinzarof Lagoon	28-Aug	Good	500	0	0	0	Shaul	
283-34.05	Kinzarof Lagoon	28-Aug	Good	600	0	0	0	Shaul	
283-34.03	Trout Creek	22-Aug	Good	30	0	100	1,000	Shaul	900 chums below bridge.
		10-Sep	Good	0	100	0	0	Shaul	1 mile survey, coho below bridge.
		19-Sep	Good	0	200	0	0	Shaul	
283-34.02	Russel Creek	13-Jul	Good	0	0	0	200	Shaul	All in lower end.
		22-Jul	Good	0	0	3,200	4,800	Berceli	A few fish above weir, most well below.
		25-Jul	Good	0	0	1,200	2,700	Shaul	200 pinks and 200 chums above weir.
		31-Jul	Good	0	0	2,300	4,700	Shaul	300 pinks and 200 chums above hatchery.
		05-Aug	Good	0	0	2,000	12,900	Shaul	400 chums were above weir, starting to build up behind it.
		17-Aug	Good	0	0	0	42,700	Shaul	Only 700 above hatchery, good sign in bay.
		28-Aug	Good	30	0	5,000	49,900	Shaul	2,900 chums and 1,000 pinks above weir.
		10-Sep	Good	100	0	0	38,000	Shaul	12,500 were above weir.
		03-Oct	Poor	0	400	0	0	Shaul	Cherokee survey, pinks and chums all gone from main stem.

-Continued-



Table 56. (Page 25 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-34.01	Mortensen	17-Aug	Good	7,050	0	0	0	Shaul	Survey of lake and creek, 50 sockeye in creek, 7,000 in lake. Survey of creek. 400 sockeye at mouth, 800 above weir, 800 below. Survey of creek.
		28-Aug	Good	1,600	0	0	0	Shaul	
		03-Oct	Good	1,500	0	0	0	Shaul	
283-32.01	Old Man's Lagoon	25-Jul	Good	0	0	0	300	Shaul	100 chums at mouth.
		22-Aug	Good	0	0	0	1,400	Shaul	
		02-Sep	Good	0	0	0	500	Shaul	
283-20.06	Thinpoint Lagoon & Entrance Channel	22-Jul	Poor	0	0	0	0	Berceli	Too windy and flat light to see anything in murky water. Lots of jumpers but water too high to see fish. Survey of lagoon, additional 1,000 sockeye at mouth. Most were packed in lower end, very in upper part of lagoon. Survey of lagoon, many in upper end, moving to lake. Many colored up, additional hundreds of carcasses on tidal flats. Survey of lagoon. Poor visibility in lower lagoon. Survey of lagoon. Some coming in at mouth.
		25-Jul	Poor	0	0	0	0	Shaul	
		05-Aug	Good	15,800	0	0	0	Shaul	
		10-Aug	Good	20,300	0	0	0	Shaul	
		22-Aug	Good	18,000	0	0	0	Shaul	
		02-Sep	Poor	2,000	1,000	0	0	Shaul	
		12-Sep	Good	0	1,200	0	0	Shaul	
		03-Oct	Good	0	600	0	0	Shaul	
283-20.08	Thinpoint West	Not surveyed.							
283-20.09	Thinpoint Lake Stream	12-Sep	Good	4,400	0	0	0	Shaul	
		03-Oct	Good	2,800	0	0	0	Shaul	
283-20.10	Thinpoint Lake	12-Sep	Good	2,500	0	0	0	Shaul	Poor visibility due to high water.
		03-Oct	Poor	600	0	0	0	Shaul	
283-20.04	Southwest Bight	05-Aug	Good	0	0	700	0	Shaul	Looks good.
		10-Aug	Good	0	0	4,800	0	Shaul	
		22-Aug	Good	0	0	5,200	0	Shaul	
		02-Sep	Good	0	0	4,500	0	Shaul	

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Table 56. (Page 26 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-20.03	McGinty's Creek	05-Aug	Good	0	0	3,200	0	Shaul	Loaded. 4,000 pinks at mouth, amazing.
		10-Aug	Good	0	0	36,000	0	Shaul	
		22-Aug	Good	0	0	47,000	0	Shaul	
		02-Sep	Good	0	0	34,000	0	Shaul	
283-20.01	Sandy Cove	05-Aug	Good	0	0	1,700	0	Shaul	Pinks in upper end, most chums in lower end. 2 mile survey. Additional 700 chums along beach. No much in lower end.
		10-Aug	Good	0	0	1,000	3,000	Shaul	
		17-Aug	Good	0	0	100	9,000	Shaul	
		22-Aug	Good	0	0	1,700	13,600	Shaul	
		02-Sep	Good	0	0	3,000	20,000	Shaul	
283-11.01	Near Egg Island Stream	05-Aug	Good	0	0	1,200	600	Shaul	Jumpers at mouth. 2,000 pinks and 200 chums at mouth, looks good.
		10-Aug	Good	0	0	2,800	0	Shaul	
		22-Aug	Good	0	0	8,000	2,000	Shaul	
		02-Sep	Good	0	0	6,500	0	Shaul	
283-12.13	Little John Lagoon	05-Aug	Good	0	0	1,300	0	Shaul	Pinks spawning, no chums anywhere. 5,000 chums on flats and in lagoon, several jumpers in deep outside lagoon. Additional 2,300 chums in lagoon.
		22-Aug	Good	0	0	1,200	900	Shaul	
		02-Sep	Good	0	0	200	6,000	Shaul	
283-12.12	Little John Sand Spit	17-Aug	Good	0	0	0	0	Shaul	1,500 chums at mouth.
		02-Sep	Good	0	0	0	0	Shaul	
283-12.11	Cannery	22-Aug	Good	0	0	0	0	Shaul	Nothing.
		02-Sep	Good	0	0	0	400	Shaul	
283-12.05	Middle Lagoon	04-Jul	Good	100	0	0	0	Shaul	Too windy and flat light to see anything, lots of algae this year. Survey of lagoon. All in lower 1/2 mile tide high. Survey of lagoon. Nothing in lower end, jumpers in potholes.
		23-Jul	Poor	0	0	0	0	Bercell	
		25-Jul	Good	1,000	0	0	0	Shaul	
		31-Jul	Good	1,800	0	0	0	Shaul	
		05-Aug	Good	0	0	0	0	Shaul	

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Table 56. (Page 27 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
283-12.05	Middle Lagoon (cont.)	28-Aug	Poor	200	400	0	0	Shaul	Poor visibility in lake due to algae bloom, coho just entered.
283-12.05	Middle Lagoon (cont.)	10-Sep	Fair	3,500	0	0	0	Shaul	Surveyed its lake and outlet only. 600 in outlet, 200 at mouth.
		19-Sep	Fair	6,700	0	0	0	Shaul	400 in outlet, some carcasses. Survey of lake and lake outlet.
		03-Oct	Fair	7,100	0	0	0	Shaul	Count low due to large alge bloom. Survey of lake and lake outlet only.
283-12.01	Hansen's	22-Aug	Excellent	2,300	0	2,100	0	Shaul	Additional 400 pinks at mouth, 2-300 carcasses off mouth, half of sockeye spawning, some in deep water on east side.
		02-Sep	Good	0	0	2,500	0	Shaul	Survey of creek.
283-60.08	Deadman's Cove	06-Aug	Fair	0	0	2,400	0	Shaul	Cherokee survey.
		17-Aug	Good	1,900	0	0	0	Shaul	Survey of lake.
		02-Sep	Good	0	0	6,000	0	Shaul	
284-60.07	Whalebone	22-Jul	Poor	80	0	0	0	Berceli	All up in creek, couldn't see into the lake - wind and light conditions.
		06-Aug	Poor	2,200	0	0	0	Shaul	200 in creek, rest schooled in lake, glare, Cherokee survey.
		02-Sep	Good	0	0	400	0	Shaul	Sockeye carcasses in upper creek.
284-60.06	Sankin Bay	02-Sep	Good	0	25	200	0	Shaul	
284-60.05	Whirl Point	06-Aug	Good	0	0	0	0	Shaul	100 pinks along beach.
		02-Sep	Good	0	0	12,000	0	Shaul	4,000 pinks at mouth, looks good.
284-60.04	Ikatan Riyer	02-Sep	Good	0	0	900	0	Shaul	Surveyed clear tributary.
284-60.03	Swede's Lake	22-Jul	Poor	100	0	0	0	Berceli	Off mouth, poor visibility due to wind and light conditions.
		06-Aug	Fair	220	0	0	0	Shaul	Cherokee survey.
		02-Sep	Good	30	0	250	0	Shaul	

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Table 56. (Page 28 of 28)

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks	
				Sockeye	Coho	Pink	Chum			
284-60.01	Ikatan Point	06-Aug	Fair	0	0	300	0	Shaul	Cherokee survey, fish in lower end.	
		02-Sep	Good	0	25	200	0	Shaul		
UNIMAK DISTRICT										
284-50.00	Dora Harbor Left	Not surveyed.								
284-40.09	Otter Cove North	06-Aug	Good	0	0	1,900	0	Shaul	Nothing.	
		02-Sep	Good	0	0	1,600	0	Shaul		
284-40.08	Otter Cove South	06-Aug	Good	0	0	0	0	Shaul		
		02-Sep	Good	0	0	400	300	Shaul		
284-40.05	Lazaref River	Not surveyed.								
283-10.	Sanak Village	Not surveyed.								
283-10.	Sanak Is. W.	Not surveyed.								
283-10.	Washwomen Creek	Not surveyed.								
283-10.??	Dodd's Bay E.	Not surveyed.								
283-10.	Sandy Bay	Not surveyed.								
283-10.	Salmon Bay	Not surveyed.								

<sup>1</sup> Unless otherwise noted, all fish listed as being at the stream mouth, etc., under remarks are additional to those in stream.

<sup>2</sup> See Orzinski weir counts and total escapement.

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Table 57. Salmon escapement survey counts in the Aleutian Islands Management Area, 1991.

Stream Number	Stream Name/Location	Date	Survey Condition	Species				Observer	Remarks
				Sockeye	Coho	Pink	Chum		
302-40.11	Morge Cove	30-Aug	Good	146	0	0	0	Ward	All fish seen were spawning in lake east and west shores only. Many fish probably missed.
302-40.10	Humpy Cove	30-Aug	Good	0	1	543	0	Ward	Survey to bridge, foot survey.
302-40.09	Summer Bay	Not Surveyed							
302-40.08	Unalaska Village	04-Sep	Good	3	1	7,193	0	Ward	Foot survey, coho, 1 sockeye and 6,000 pinks below lake, nothing above ladder. The coho was sick.
302-40.07	Pyramid Creek	03-Sep	Good	0	0	0	0	Ward	Foot survey, nothing.
302-40.06	Captain's Bay	30-Aug	Good	0	0	1,200	26	Ward	Foot survey.

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Table 58. Salmon escapement survey counts in the North Peninsula, 1991.<sup>1</sup>

Stream Number	Stream Name/Location	Date	Survey Condition	Species					Observer	Remarks
				Chinook	Sockeye	Coho	Pink	Chum		
NORTHWESTERN DISTRICT										
311-20.15	Tugumak River	31-Jul		0	25	0	200	800	Shaul	Species ID difficult.
311-30.06	Divide Creek	31-Jul		0	2,400	0	0	0	Shaul	Species ID difficult in lower end.
311-30.05	Unnamed	Not Surveyed								
311-30.07	Whaleback	04-Jul	Good	0	0	0	0	0	Shaul	Nothing in creek, saw 10,000 reds in lagoon plus lots of jumpers. 1,500 in outlet channel.
		13-Jul	Good	0	18,600	0	0	0	Shaul	8,000 in outlet channel, still coming in. 10,600 in creek up to forks, couldn't see in lake due to algae bloom.
		31-Jul	Good	0	58,000	0	0	0	Shaul	39,000 in creek, of which 37,000 were below forks. 16,000 in outlet, 3,000 in lake. Probably more in lake, as there were jumpers in deep
311-30.08	Christianson	31-Jul	Good	0	1,500	0	0	0	Shaul	
311-30.09	Mudhole	04-Jul	Good	0	0	0	0	0	Shaul	100 fish species (?) in creek, 7,000 reds and chums in lagoon. West side of lagoon cleaned out. Fish still coming in however.
		13-Jul	Good	0	200	0	0	0	Shaul	10,000 reds and 7,000 chums in lagoon. 1,000 chums in lagoon outlet. 4,000 reds near 30.10, rest in middle or near 30.09.
		31-Jul	Good	0	100	0	0	1,000	Shaul	
311-30.10	Clear Lagoon	04-Jul	Good	0	0	0	0	0	Shaul	Nothing in creek. Remarks under 30.09.
		13-Jul	Good	0	50	0	0	0	Shaul	4,000 reds in lagoon, all on east side.
		31-Jul	Good	0	200	0	0	0	Shaul	Remarks under 30.09.
311-40.01	Emil's River	31-Jul	Good	0	170	0	0	200	Shaul	
311-40.04	North Creek	31-Jul	Good	0	0	0	0	0	Shaul	Nothing.

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Table 58. (Page 2 of 10)

Stream Number	Stream Name/Location	Date	Survey Condition	Species					Observer	Remarks
				Chinook	Sockeye	Coho	Pink	Chum		
311-50.01	Big River	22-Aug	Good	0	0	0	0	1,600	Shaul	Surveyed spawning tributary. Observed a set of shed moose antlers along stream.
311-50.02	Swanson Lagoon	04-Jul	Fair	0	0	0	0	400	Shaul	An additional 300 in outlet and 700 in lagoon.
		13-Jul	Fair	0	0	0	0	1,300	Shaul	Survey of creek.
		22-Jul	Fair	0	0	0	0	1,700	Berceli	100 of which in lagoon, most in large schools well below riffles.
		25-Jul	Fair	0	600	0	0	1,500	Shaul	500 chum and 100 reds on spawning grounds. Nothing in lagoon.
		31-Jul	Fair	0	1,200	0	0	300	Shaul	Additional 700 reds in lagoon and 1,200 in lagoon outlet.
		22-Aug	Excellent	0	10,000	100	0	600	Shaul	1,500 reds in creek, of which 700 were spawning. Chums all spawning. Coho in outlet. Most reds in lagoon starting to turn.
		03-Oct	Poor	0	5,000	0	0	0	Shaul	Survey of lagoon. Reds spawning in lagoon. Visibility not good enough to see cohos.
311-60.01	Mike's Valley	04-Jul	Good	0	0	0	0	400	Shaul	2 mile survey. 100 chums at mouth.
		13-Jul	Good	0	0	0	0	1,700	Shaul	2 mile survey, 300 chums at mouth.
		22-Jul	Good	0	0	0	0	5,000	Berceli	100 at mouth. Schooled in creek.
		25-Jul	Good	0	0	0	500	3,400	Shaul	300 chums at mouth. 300 pinks and 1,800 chums in lower end, 500 chums in rocky stretch, rest in upper valley.
		31-Jul	Good	0	0	0	200	4,400	Shaul	200 chums at mouth. 1,400 chums schooled in lower 2 miles.
		22-Aug	Good	0	3	0	100	9,000	Shaul	Plus numerous carcasses in upper valley.
		02-Sep	Good	0	0	0	0	2,500	Shaul	2 mile survey.
311-60.06	Anderson's	06-Aug	Good	0	0	0	200	0	Shaul	1/2 mile survey, Cherokee survey.
		02-Sep	Good	0	0	0	100	400	Shaul	
311-60.07	Traders Cove & .08	06-Aug	Good	0	0	0	0	100	Shaul	2-3,000 chums in channel, Cherokee survey.
		17-Aug	Good	0	0	0	0	100	Shaul	200 chums on flats, 1,000 chums in channel.
		02-Sep	Good	0	0	0	100	400	Shaul	4,000 chums in channel and on flats.
		10-Sep	Good	0	0	0	0	2,100	Shaul	5,000 chums in channel and on flats.

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Table 58. (Page 3 of 10)

Stream Number	Stream Name/Location	Date	Survey Condition	Species					Observer	Remarks
				Chinook	Sockeye	Coho	Pink	Chum		
311-60.12	Warmsprings Bay	02-Sep	Good	0	0	0	0	20	Shaul	Several dead on flats but no sign of live fish. 3,000 chums at mouth.
		10-Sep	Good	0	0	0	0	1,500	Shaul	
311-60.13	Hungry's Creek	17-Aug	Good	0	50	0	0	0	Shaul	
		02-Sep	Good	0	0	0	200	0	Shaul	
312-20.01	Norma Bay	28-Aug	Good	0	110	0	0	0	Shaul	
312-20.02	Mike's Duck Camp	31-Jul	Good	0	0	0	0	900	Shaul	1,000 chums at mouth.
		28-Aug	Good	0	0	0	0	1,700	Shaul	2,000 chums at mouth.
312-20.03	Norma Bay South	31-Jul	Good	0	0	0	0	300	Shaul	6,000 chums on flats. 2-3,000 chums at mouth. Estimate on flats rough as fish were scattered due to high tide.
		05-Aug	Good	0	0	0	0	700	Shaul	
312-20.04	Norma Bay South	28-Aug	Good	0	0	0	0	5,900	Shaul	4,000 chums at mouth.
		31-Jul	Good	0	0	0	0	0	Shaul	200 chums at mouth, nothing in stream.
		05-Aug	Good	0	0	0	0	800	Shaul	5,000 chums at mouth.
312-20.52	2nd stream W of Frosty Cr.	28-Aug	Good	0	400	0	0	500	Shaul	1,000 chums at mouth.
312-20.51	Springs South of Frosty	28-Aug	Good	0	200	0	0	1,000	Shaul	500 chums at mouth.
312-20.05	Frosty Creek	13-Jul	Good	0	0	0	0	300	Shaul	All in lower end. 1,500 chums inside mouth. Fish congregated below - blown out of upper portions. 2,000 chums at mouth, 300 in upper mile. 1,500 were in lower end. 1 boat anchored in closed area and probably fished there.
		22-Jul	Good	0	0	0	0	950	Berceli	
		25-Jul	Good	0	0	0	0	2,000	Shaul	
		31-Jul	Good	0	0	0	0	2,200	Shaul	
312-20.06	Blue Bill Lake	05-Aug	Good	0	0	0	0	1,500	Shaul	500 were in Little Bluebill. 1,500 in Little Bluebill. Looks good. 1,400 in Little Bluebill.
		28-Aug	Good	0	0	0	0	7,500	Shaul	
		28-Aug	Good	0	0	0	0	0	Shaul	
		10-Sep	Good	0	10,100	0	0	0	Shaul	
		19-Sep	Good	0	8,000	0	0	0	Shaul	
		03-Oct	Good	0	9,300	0	0	0	Shaul	

-Continued-



Table 58. (Page 4 of 10)

Stream Number	Stream Name/Location	Date	Survey Condition	Species					Observer	Remarks
				Chinook	Sockeye	Coho	Pink	Chum		
312-20.13	Outer Marker Lake	28-Aug	Good	0	900	0	0	200	Shaul	100 sockeye spawning in VOR lake, balance in Hess Lake. Chums in outlet.
		10-Sep	Good	0	3,000	0	0	0	Shaul	800 in VOR lake.
		19-Sep	Good	0	900	0	0	300	Shaul	500 in VOR lake.
		03-Oct	Good	0	1,600	0	0	0	Shaul	700 in VOR lake, balance in Hess Lake.
312-40.00	Spring fed Stream 2 mi. SW of Joshua Green River	Not surveyed								
312-40.01	Joshua Green	18-Jul	Good	100	3,000	0	0	16,200	Shaul	Survey of right hand and below. Kings, 1,000 sockeye, and 3,200 chums were above lake.
		22-Jul	Poor	0	0	0	0	150	Berceli	Poor visibility, could see jumpers but not the fish below.
		25-Jul	Good	100	7,500	0	0	15,300	Shaul	Surveyed right hand and below. A few chums starting to spawn.
		29-Jul	Good	0	11,000	0	0	4,000	Shaul	Surveyed below lake. Sockeye turning color.
		05-Aug	Good	0	2,500	0	0	9,500	Shaul	Surveyed below lake.
		28-Aug	Good	0	9,700	0	0	46,400	Shaul	Count low as main channel murky.
312-40.02	Moffet Springs Creek	18-Jul	Good	0	0	0	0	1,300	Shaul	Several schools of dolly varden.
		22-Jul	Good	0	400	0	0	0	Berceli	
		25-Jul	Excellent	0	50	0	0	800	Shaul	
		28-Aug	Good	0	200	0	0	23,700	Shaul	
312-40.03	Moffet Creek	18-Jul	Good	0	0	0	0	800	Shaul	Some may have been sockeye.
		22-Jul	Good	0	300	0	0	0	Berceli	All colored up - upper middle section, nothing below.
		25-Jul	Excellent	0	1,100	0	0	1,300	Shaul	Nothing in lower end.
		28-Aug	Good	0	800	0	0	19,200	Shaul	Looks good. 7,000 chums were below forks.
NORTHERN DISTRICT										
313-10.02	North Creek	18-Jul	Poor	200	0	0	0	0	Shaul	Rough estimate, poor visibility. 4,200 reds in C,1 Lake, balance in C,2 Lakes. Pinks and chums in B.
		28-Aug	Good	0	9,900	0	100	1,000	Shaul	
313-10.05	Cathedral River	28-Aug	Good	0	10	0	0	0	Shaul	

-Continued-

Table 58. (Page 5 of 10)

Stream Number	Stream Name/Location	Date	Survey Condition	Species					Observer	Remarks
				Chinook	Sockeye	Coho	Pink	Chum		
313-10.06	Trader Mt.	28-Aug	Good	0	0	0	0	200	Shaul	
313-10.11	Black Hills	04-Jul	Good	40	0	0	0	0	Shaul	About 10 sportfishermen. Some fish coming in.
		18-Jul	Good	200	0	0	0	0	Shaul	Poor escapement.
313-10.14	Steelhead	04-Jul	Good	50	0	0	0	0	Shaul	Just coming in.
		18-Jul	Good	130	0	0	0	0	Shaul	Poor escapement.
313-30.01	David's River	01-Aug	Good	1,300	2,100	0	0	0	Shaul	Surveyed above Maxie's house.
		04-Sep	Good	0	0	1,000	0	0	Shaul	Surveyed lakes, 2,800 in Big Fish, rest in next two lakes above Maxie's house.
		19-Sep	Good	0	4,300	0	0	0	Shaul	
313-30.02	Caribou River	29-Jul	Good	0	2,650	0	0	0	Shaul	Surveyed Divide Lake and Trader Mountain tributary. 50 in Divide Lake.
313-30.03	Nelson River Hoodoo Lake <sup>2</sup>	18-Jun	Good	1,250	3,500	0	0	0	Shaul	Surveyed from forks to weir. Count low, especially for sockeye due to deep water.
		07-Jul	Good	2,500	15,600	0	0	0	Shaul	Count low due to chop in deep water. About 100 kings above weir not included. 500 of the kings were in Peterson.
		18-Jul	Good	11,000	0	0	0	0	Shaul	Surveyed forks to weir. Only counted kings, also large numbers of reds, many colored up. Another 170 kings in Peterson. May have misidentified species when large numbers of kings and sockeye mixed.
		01-Aug	Excellent	4,800	12,100	0	0	2,100	Shaul	Surveyed forks to weir. King count more accurate than 7/18. Sockeye all colored. 517 kings counted thru weir and 130 in Peterson.
		28-Aug	Poor	0	0	6,200	0	0	Shaul	Likely another 5-10,000 in lower end where visibility was poor due to deep choppy water. 1,800 were above Peterson Creek, counted only coho. Heavy sockeye spawning in river.

-Continued-

Table 58. (Page 6 of 10)

Stream Number	Stream Name/Location	Date	Survey Condition	Species					Observer	Remarks
				Chinook	Sockeye	Coho	Pink	Chum		
313-30.03	Nelson River & Hoodo Lake <sup>2</sup> (cont.)	04-Sep	Good/Poor	0	0	10,600	0	0	Shaul	10,000 above trapper's cabin to weir. 600 seen in lower river, probably another 2-3,000 in lower river. Good visibility in upper river, poor below.
		10-Sep	Good	0	0	17,500	0	0	Shaul	Surveyed above trapper's cabin, water too high in lower river.
		19-Sep	Good	0	0	33,000	0	0	Shaul	Virtually all above tower. Half were in 1st 2 miles above Left Creek, nothing in lake.
313-30.03	Peterson	18-Jun	Good	170	0	0	0	0	Shaul	
		01-Aug	Good	130	0	0	0	0	Shaul	
313-30.??	Coastal Lake	14-Sep	Poor	0	1,700	0	0	0	Shaul	500 in Drillhole Lake, poor conditions, choppy, plankton.
314-20.02	Doe Valley	21-Jul	Good	0	0	0	0	0	Berceli	Low water, need rain.
		22-Aug	Good	0	0	0	0	600	Murphy	Additional 300 carcasses. Count may be low due to brush.
314-20.03	Buck Valley	21-Jul	Good	0	0	0	0	100	Berceli	200 chums at mouth, low water.
		02-Aug	Good	0	0	0	0	0	Murphy	
		22-Aug	Good	0	0	0	0	1,300	Murphy	Additional 1,100 carcasses.
314-20.04	Deer Valley	21-Jul	Good	0	0	0	0	800	Berceli	All in lower creek, none at mouth, low tide.
		02-Aug	Good	0	0	0	0	0	Murphy	Nothing.
		22-Aug	Good	0	0	0	0	2,800	Murphy	Additional 500 carcasses.
314-20.05	Portage Valley	21-Jul	Good	0	0	0	0	10	Berceli	20 chum at mouth, need rain.
		02-Aug	Good	0	0	0	0	0	Murphy	200 chum at mouth.
		22-Aug	Good	0	0	0	0	50	Murphy	
314-20.06	Grass Valley	21-Jul	Good	0	0	0	0	0	Berceli	50 chums at mouth.
		02-Aug	Good	0	100	0	0	1,700	Murphy	3,000 chums at mouth.
		22-Aug	Good	0	10	0	0	15,300	Murphy	Additional 1,400 carcasses.
314-20.07	Lawrence Valley	21-Jul	Good	0	0	0	0	750	Berceli	200 chums at mouth.
		02-Aug	Good	0	0	0	0	1,600	Murphy	
		22-Aug	Good	0	0	0	0	21,600	Murphy	Additional 5,100 carcasses.
314-20.08	Mine Harbor	21-Jul	Good	0	0	0	0	0	Berceli	
		02-Aug	Good	0	0	0	0	0	Murphy	Nothing
		22-Aug	Good	0	0	0	0	0	Murphy	Nothing

-Continued-

Table 58. (Page 7 of 10)

Stream Number	Stream Name/Location	Date	Survey Condition	Species					Observer	Remarks
				Chinook	Sockeye	Coho	Pink	Chum		
314-20.09	Coal Creek	21-Jul	Good	0	0	0	0	0	Berceli	Jumpers at Point Divide.
		02-Aug	Good	0	0	0	0	500	Murphy	
		22-Aug	Good	0	0	0	0	1,100	Murphy	Additional 500 carcasses.
314-30.04	Mud Bay	02-Aug	Good	0	0	0	0	400	Murphy	
		22-Aug	Good	0	0	0	0	700	Murphy	Additional 50 carcasses.
314-30.05	Mud Bay	02-Aug	Good	0	0	0	0	0	Murphy	Nothing.
		22-Aug	Good	0	0	0	0	500	Murphy	
314-30.07	Right Head Creek	22-Aug	Good	0	0	0	0	100	Murphy	
314-30.09	Right Head Creek	02-Aug	Good	0	0	0	0	300	Murphy	200 in slough at north side.
		22-Aug	Good	0	0	0	0	600	Murphy	400 in slough.
314-30.10	Left Head Creek	02-Aug	Good	0	0	0	0	0	Murphy	Nothing.
		22-Aug	Good	0	0	0	0	1,600	Murphy	1,300 in middle fork, 300 in middle fork.
315-10.01	Frank's Lagoon	07-Jul	Good	0	0	0	0	200	Shaul	Schooled in lower end of creek. Additional 20 chums in outlet. Lagoon very high.
		26-Jul	Good	0	0	0	0	0	Shaul	Nothing.
		22-Aug	Good	0	0	0	0	0	Murphy	Nothing, mouth blocked off, about 2,000 dead fish outside.
315-10.02	King Salmon	18-Jun	Good	0	0	0	0	0	Shaul	Nothing.
		07-Jul	Good	100	0	0	0	0	Shaul	In lower 200 yards.
		26-Jul	Good	200	0	0	0	80	Shaul	3 mi. survey.
315-11.02	C-E Branches of Bear River	26-Jul	Good	200	0	0	0	0	Shaul	Surveyed to fork, Ridgeway Cr.
315-12.00	Sandy River & Lake	18-Jun	Good	0	1,500	0	0	0	Shaul	Surveyed to below lake. 700 in lower end of "lagoon" below lake, rest in lower half mile. 30-40 seals at mouth, about 3 times the number at Bear River.
		07-Jul	Good	0	32,600	0	0	0	Shaul	32,000 were in lake starting to turn. Run appears over. Good escapement.

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Table 58. (Page 8 of 10)

Stream Number	Stream Name/Location	Date	Survey Condition	Species					Observer	Remarks
				Chinook	Sockeye	Coho	Pink	Chum		
315-12.00	Sandy River & Lake (cont.)	26-Jul	Good	60	75,200	0	0	0	Shaul	12,500 spawning, 3,700 sockeye getting ready to spawn in upper part of lower Sandy. King count low, couldn't survey below muddy tributary.
316-10.01	Lime Creek	Not surveyed								
316-10.02	Unnamed	Not Surveyed								
316-10.04	Three Hills	26-Jul	Good	0	200	0	0	0	Shaul	Surveyed lake only.
316-10.05	Ocean River	22-Jun	Good	0	11,000	0	0	0	Manthey	8,400 (dark red) in Wildman L., 200 in Finger L., balance below. River empties into Ilnik L., however saltwater slops into the river during high tides pushed by wave action.
		26-Jul	Good	20	67,700	0	0	0	Shaul	60,000 sockeye plus several thousand carcasses were in Wildman L. where count was low due to algae bloom, but gross overescapement. Kings and 5,000 sockeye from Fracture Creek to lodge, mostly spawning. 1,500 sockeye in lower end.
316-10.06	Willie Creek	22-Jun	Good	0	2,550	0	0	0	Manthey	All schooled in lake area.
		26-Jul	Good	0	23,400	0	0	0	Shaul	Approximately 4,000 spawning.
316-20.01	Ilnik Estuary & River	22-Jun	Good	0	6,150	0	0	0	Manthey	3,000 below weir, 2,750 weir to village, 400 above village. Couldn't see in front of village due to high water, otherwise excellent conditions.
		26-Jul	Good	0	10,100	0	0	0	Shaul	4,700 spawning, 2,000 at mouth of C. 400 below village, only fair escapement.
		11-Sep	Good	0	0	27,000	0	0	Shaul	Most in lake, well above village.
316-20.04	Unangashak River	11-Sep	Fair	0	0	1,500	0	0	Shaul	1 mile survey.
317-2	Charles	06-Aug	Good	100	800	0	0	300	Murphy	

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Table 58. (Page 9 of 10)

Stream Number	Stream Name/Location	Date	Survey Condition	Species					Observer	Remarks
				Chinook	Sockeye	Coho	Pink	Chum		
317-4 A&B	Bluff Creek	06-Aug	Good	550	5,300	0	0	1,000	Murphy	100 sockeye, 50 kings and 600 chums in Yellow Bluff, rest in Red Bluff.
317-6 A	Highland Creek	06-Aug	Good	0	700	0	0	0	Murphy	
317-7 A	Meshik River	06-Aug	Good	0	0	0	0	0	Murphy	All fish in smaller tributaries. Survey to Plenty Bear, water high and murky, count low.
		11-Sep	Poor	0	0	3,000	0	0	Shaul	
317-7 B	Braided Creek	06-Aug	Good	150	100	0	0	400	Murphy	
317-7 C	Landlocked Creek	06-Aug	Good	0	1,000	0	0	0	Murphy	
317-7 D	Bluff Cr., Branch of Landlocked Creek	06-Aug	Good	0	4,700	0	0	0	Murphy	
317-7 E	Blue Violet	06-Aug	Good	0	6,100	0	0	700	Murphy	300 sockeye in Sleepy Creek, 3,400 sockeye, 300 chums in Black Cr.
317-7 F	Wolf Creek	06-Aug	Good	50	3,700	0	0	1,200	Murphy	
317-7 H	Shoe Creek	06-Aug	Good	0	500	0	0	1,400	Murphy	
317-7 K	Unnamed	06-Aug	Good	0	480	0	0	0	Murphy	
317-7 L	Unnamed	06-Aug	Good	0	200	0	0	0	Murphy	
317-7 M	Unnamed	06-Aug	Good	0	500	0	0	100	Murphy	
317-7 N	Unnamed	06-Aug	Good	0	500	0	0	2,000	Murphy	
317-7 O	Plenty Bear Creek	06-Aug	Good	100	1,600	0	0	3,200	Murphy	
317-7 O-A	Near Port Heiden	06-Aug	Good	0	100	0	0	1,600	Murphy	
317-7 P	Waterfall Creek	06-Aug	Good	0	0	0	0	200	Murphy	
317-7 R	Rainbow Creek	06-Aug	Good	0	0	0	0	400	Murphy	
317-7 T	Cub Creek	06-Aug	Good	0	100	0	0	100	Murphy	

-Continued-

Table 58. (Page 10 of 10)

Stream Number	Stream Name/Location	Date	Survey Condition	Species					Observer	Remarks
				Chinook	Sockeye	Coho	Pink	Chum		
317-20.09 Barabara Creek Not Surveyed										
317-20.08	Birthday Creek	06-Aug	Good	0	100	0	0	800	Murphy	
318-20.04	Mud Creek	05-Aug	Good	0	8,100	0	0	0	Murphy	Some turning color.
		11-Sep	Excellent	0	0	6,300	0	0	Shaul	
318-20.06 A	Cinder River	05-Aug	Good	0	4,000	0	0	1,800	Murphy	Survey to lake, water high and murky.
		11-Sep	Poor	0	0	2,000	0	0	Shaul	
318-20.06 D	Lava Creek	05-Aug	Good	0	24,000	0	0	100	Murphy	
318-20.06 E	High Creek	05-Aug	Good	0	700	0	0	0	Murphy	
318-20.06 H	Maloy Creek	05-Aug	Good	400	4,900	0	0	1,400	Murphy	
318-20.06 J	Wiggly Creek	05-Aug	Good	100	4,500	0	0	500	Murphy	
318-20.06 Ray	Creek	05-Aug	Good	100	200	0	0	300	Murphy	
318-20.06 L	Unnamed	05-Aug	Good	40	1,000	0	0	350	Murphy	

<sup>1</sup> Unless otherwise noted, fish listed in remarks as being off mouth, etc., are in addition to those in stream.

<sup>2</sup> See Bear River weir counts and total escapement.

<sup>3</sup> See Nelson River weir counts and total escapement.

<sup>4</sup> See Ilnik River weir counts and total escapement.

Table 59. South Peninsula Sockeye Indexed Total Escapements by Section, 1962-1991<sup>a</sup>

Year	Southwest Stepovak	Shumagin Islands	Mino Creek- Little Coal Bay	Pavlof Bay	Canoe Bay	Cold Bay	Thin Point	Morzhovoi Bay	Ikatan Bay
1962	5,000	4,000	100	(500)	200	-	-	-	-
1963	7,600	2,700	100	(500)	0	-	-	-	-
1964	5,800	700	0	900	0	-	-	-	-
1965	6,000	2,100	0	1,500	0	-	-	-	-
1966	10,000	900	100	200	0	-	-	-	-
1967	6,200	4,000	0	400	0	-	-	-	-
1968	3,600	2,400	0	400	0	2,300	2,200	1,500	400
1969	19,200	1,600	200	500	0	5,200	2,100	500	200
1970	4,600	4,400	500	1,400	300	1,000	1,100	(2,500)	700
1971	11,100	2,800	500	1,300	0	900	1,300	200	1,300
1972	6,500	2,000	0	400	0	1,100	1,300	200	400
1973	1,200	1,000	0	500	0	1,500	700	400	1,000
1974	61,500	7,900	0	200	200	3,500	16,000	5,300	1,000
1975	22,300	11,600	500	1,600	1,600	5,000	6,100	2,200	800
1976	29,700	7,500	1,000	2,800	300	4,900	20,500	1,700	1,300
1977	17,000	9,200	2,000	4,500	500	7,600	17,700	3,800	2,600
1978	22,200	9,000	2,700	2,100	1,500	14,700	7,400	2,600	(2,600)
1979	20,000	13,000	200	1,100	1,500	7,800	6,900	700	2,100
1980	12,000	6,300	1,100	1,000	5,500	4,800	12,000	1,300	1,000
1981	18,000	4,000	500	5,500	2,000	5,600	7,500	1,200	1,400
1982	9,100	10,000	800	1,000	1,000	2,600	8,800	4,200	1,700
1983	21,500	10,000	1,600	1,100	5,000	8,000	6,500	3,700	1,800
1984	18,600	10,600	100	700	9,000	6,600	7,000	500	1,800
1985	14,000	7,800	500	900	1,000	5,000	4,600	2,100	3,900
1986	10,500	6,800	100	1,500	2,700	1,800	12,400	5,500	1,800
1987	11,400	2,000	500	1,200	1,300	7,800	8,700	7,000	2,100
1988	19,300	3,100	600	1,900	1,500	9,500	23,500	7,300	2,300
1989	16,700	7,300	600	800	1,100	5,900	21,500	14,300	3,000
1990	15,000	5,900	1,200	1,000	600	6,600	15,000	40,900	1,700
1991	40,000	4,800	1,400	500	2,000	10,400	35,800	18,800	4,400

<sup>a</sup> Figures in parenthesis are extrapolated estimates.



Table 60. South Peninsula Pink Salmon Indexed Total Escapements by Section, 1962-1991<sup>a</sup> (Page 1 of 2)

Year	Stepovak Flats & East Stepovak	Northwest and Southwest Stepovak	Palboa Bay	Shumagin Islands	Beaver Bay	Mino Creek- Little Coal Bay
1962	48,000	122,300	(24,500)	112,900	(17,500)	278,700
1963	87,000	197,000	53,800	52,000	21,700	290,100
1964	35,000	155,300	25,200	125,400	30,500	316,000
1965	100,000	160,700	32,000	50,900	8,400	255,100
1966	107,000	191,500	(70,000)	(83,000)	(10,000)	108,600
1967	53,200	67,000	25,100	32,000	1,800	73,000
1968	25,000	(75,000)	63,600	51,200	(8,000)	96,200
1969	180,000	369,300	187,200	112,900	29,400	484,900
1970	59,000	273,900	38,700	166,500	(15,000)	173,400
1971	15,700	101,200	13,600	32,000	(12,000)	190,100
1972	1,300	20,900	1,100	9,900	0	13,200
1973	9,500	17,500	(6,000)	12,000	(500)	21,500
1974	4,100	41,400	7,500	(40,000)	(6,000)	28,000
1975	20,000	110,000	8,000	52,200	2,500	90,400
1976	30,000	204,600	42,500	331,000	(14,000)	116,900
1977	101,400	360,000	92,700	299,600	82,500	662,000
1978	77,000	449,200	108,200	199,600	60,500	498,100
1979	40,000	302,400	133,600	(131,400)	65,700	648,100
1980	56,800	344,100	77,700	133,600	32,400	297,500
1981	78,800	460,000	82,000	89,600	53,600	700,000
1982	25,000	313,400	50,000	140,000	50,000	419,200
1983	42,700	115,300	27,300	51,700	4,000	160,400
1984	101,000	418,100	135,100	165,800	49,200	876,800
1985	34,200	216,300	34,500	125,600	23,300	380,200
1986	50,700	222,000	41,200	176,000	9,400	239,700
1987	89,100	290,500	58,100	174,700	48,800	321,700
1988	79,300	450,400	82,200	257,200	47,800	248,900
1989	85,900	189,200	74,400	115,000	68,000	453,400
1990	69,600	186,100	74,700	154,000	7,200	224,100
1991	168,500	366,200	111,400	274,700	28,000	921,900

Year	Pavlof Bay	Canoe Bay	Volcano Bay	Belkofski Bay	Deer Island	Cold Bay
1962	213,200	9,000	5,000	95,300	229,100	(7,000)
1963	158,900	26,000	7,200	150,200	225,300	9,700
1964	205,000	(10,000)	5,100	(85,000)	201,000	24,500
1965	158,600	24,200	21,000	53,000	135,900	7,000
1966	55,200	2,100	0	30,000	32,600	13,300
1967	62,600	12,600	21,000	72,000	15,600	300
1968	132,600	76,500	(7,200)	54,000	67,000	97,600
1969	438,500	104,000	115,000	244,000	185,100	4,000
1970	186,500	94,900	10,500	65,800	120,500	29,200
1971	76,200	47,200	13,500	58,100	136,700	200
1972	29,400	6,000	7,000	8,000	7,000	1,100
1973	10,000	8,700	7,300	6,300	7,100	200
1974	106,800	4,800	3,000	10,100	16,100	8,200
1975	68,900	5,800	70,000	58,600	56,100	1,100
1976	267,000	78,000	117,600	109,600	47,800	50,100
1977	442,300	129,000	137,500	239,200	101,200	8,300
1978	395,700	178,000	193,800	221,200	184,000	76,900
1979	543,100	260,800	60,000	139,200	256,100	5,900
1980	425,200	43,100	56,200	230,200	350,200	49,600
1981	325,000	86,000	107,000	163,600	107,500	7,900
1982	462,300	73,300	41,900	106,300	157,700	95,100
1983	172,500	65,300	26,200	50,900	89,400	11,100
1984	708,800	72,000	143,600	207,000	446,000	143,200
1985	378,500	36,700	24,200	82,100	206,300	7,100
1986	403,800	42,600	78,800	111,600	181,500	29,900
1987	282,300	39,200	19,800	50,400	137,400	7,000
1988	390,000	80,700	127,500	250,100	482,000	33,900
1989	183,200	10,300	37,200	104,500	401,100	86,100
1990	262,800	39,700	56,500	132,000	218,000	37,200
1991	366,100	31,600	51,600	102,900	317,700	52,800

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Table 60. South Peninsula Pink Salmon Indexed Total Escapements by Section, 1962-1991<sup>a</sup> (Page 2 of 2)

Year	Tulu Point	Morzhovoi Bay	Ikatan Bay	Unimak District	Bechevin <sup>b</sup> Bay
1962	31,300	63,000	170,000	172,000	4,000
1963	(4,000)	15,000	(10,000)	(10,000)	4,400
1964	39,400	(41,000)	(110,000)	27,500	(15,000)
1965	13,700	6,100	5,000	3,800	900
1966	5,900	2,000	3,900	4,300	1,300
1967	5,100	2,500	700	(1,000)	500
1968	9,400	14,000	29,000	17,000	25,000
1969	14,700	1,000	3,500	1,400	2,100
1970	7,900	9,300	25,000	22,800	11,100
1971	3,600	800	1,500	300	8,400
1972	1,100	3,700	1,500	200	1,200
1973	4,000	(200)	0	(0)	(200)
1974	1,600	300	2,500	(4,000)	(23,000)
1975	5,200	2,100	1,000	200	500
1976	6,000	13,400	10,900	(17,000)	37,200
1977	5,100	8,100	9,500	400	6,200
1978	15,700	90,000	75,000	35,800	90,400
1979	6,000	9,000	24,400	3,800	9,300
1980	53,000	76,500	320,500	95,000	94,000
1981	18,200	9,500	17,300	800	5,700
1982	34,900	48,000	187,900	88,000	51,500
1983	15,700	4,400	13,500	800	3,900
1984	77,000	16,500	199,000	52,900	33,300
1985	30,300	8,500	10,500	15,000 <sup>c</sup>	1,400
1986	39,700	14,800	58,500	16,400 <sup>c</sup>	12,600
1987	7,500	2,900	5,800	5,300	1,100
1988	55,600	21,600	103,900	18,500	26,700
1989	36,400	10,200	6,800	(9,400)	0
1990	38,700	14,700	66,400	16,700 <sup>c</sup>	21,800
1991	84,000	13,600	26,700	4,200	1,200

<sup>a</sup> Figures in parenthesis are extrapolated estimates.<sup>b</sup> Bechevin Bay is considered part of the North Peninsula.<sup>c</sup> Includes Sanak Island, which accounted for 15,500, 5,400, and 5,700 during 1985, 1986 and 1990 respectively.

Table 61. South Peninsula Chum Salmon Indexed Total Escapements by Section, 1962-1991<sup>1</sup>

Year	Stepovak Flats & East Stepovak	Northwest and Southwest Stepovak	Balboa Bay	Shumagin Islands	Beaver Bay	Mino Creek- Little Coal Bay
1962	12,000	14,000	(43,700)	10,000	(6,000)	16,900
1963	29,400	71,900	43,900	1,200	0	300
1964	18,000	17,500	24,200	100	4,500	1,500
1965	60,000	23,500	29,900	1,100	200	100
1966	110,000	33,300	(100,000)	0	0	2,000
1967	15,700	5,500	27,100	1,100	3,300	0
1968	23,000	(11,100)	31,600	3,700	(6,500)	800
1969	6,000	9,400	16,400	2,400	9,800	0
1970	25,000	24,700	29,900	0	(15,000)	100
1971	56,100	49,900	26,500	300	(20,000)	200
1972	19,000	20,300	15,100	6,600	5,500	0
1973	27,000	4,500	8,700	4,400	(7,500)	800
1974	25,000	11,000	8,200	(1,500)	9,600	400
1975	24,000	43,100	(9,000)	8,300	4,900	1,500
1976	20,000	19,300	43,100	10,100	(10,400)	0
1977	126,200	47,300	55,300	14,000	15,000	0
1978	74,000	76,900	53,300	26,000	7,000	500
1979	(50,000)	50,400	28,500	(5,000)	200	0
1980	26,100	44,300	28,300	1,100	19,000	0
1981	34,000	23,900	42,000	5,500	13,000	0
1982	20,000	26,900	14,000	3,000	10,000	0
1983	40,200	51,100	46,600	11,800	10,700	0
1984	54,200	42,400	35,700	56,300	62,400	0
1985	34,800	16,900	17,500	24,300	18,800	0
1986	44,300	38,700	33,300	1,500	9,900	0
1987	91,000	28,100	35,600	12,600	5,600	4,100
1988	21,000	20,700	23,300	7,600	12,000	2,000
1989	55,400	11,700	4,000	26,000	26,000	0
1990	40,000	34,600	18,500	12,000	8,900	400
1991	99,000	22,200	35,600	16,500	8,000	1,100

Year	Pavlof Bay	Canoe Bay	Volcano Bay	Belkofski Bay	Deer Island	Cold Bay
1962	(26,500)	109,500	54,900	29,000	0	(13,000)
1963	(10,000)	106,300	17,900	104,600	0	46,400
1964	(25,000)	70,000	70,400	51,700	0	114,300
1965	(15,000)	73,500	6,300	7,000	0	10,400
1966	(20,000)	89,500	29,900	11,000	0	14,300
1967	(12,000)	68,100	19,100	21,000	0	5,500
1968	23,300	91,700	(8,700)	29,500	0	31,400
1969	(5,000)	47,900	2,000	10,000	0	20,100
1970	13,000	64,000	25,200	36,500	0	34,100
1971	(15,000)	31,100	24,100	65,500	0	25,600
1972	8,100	70,400	16,000	37,300	0	25,700
1973	19,500	58,500	16,000	34,400	0	11,600
1974	(22,000)	92,100	27,400	29,100	0	16,400
1975	8,200	61,200	11,500	4,800	0	8,200
1976	17,500	104,900	29,500	30,000	0	24,300
1977	60,100	183,000	76,000	60,300	0	85,000
1978	43,100	105,400	54,600	32,500	0	103,600
1979	(17,000)	151,600	41,500	17,800	0	17,300
1980	15,600	107,200	11,900	31,500	0	50,600
1981	13,600	102,500	30,400	34,900	0	50,400
1982	9,900	119,200	56,000	24,100	0	74,600
1983	12,000	156,500	37,700	16,900	0	33,500
1984	29,500	165,500	79,800	50,500	0	78,000
1985	22,300	150,100	49,300	31,100	0	75,200
1986	23,100	88,800	82,000	64,700	0	111,800
1987	43,000	109,200	69,900	57,400	0	89,100
1988	44,600	136,800	28,400	63,100	0	101,900
1989	18,200	71,300	15,600	27,900	0	61,000
1990	28,500	67,400	36,000	45,500	0	34,000
1991	34,900	128,000	72,300	29,600	0	101,300

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Table 61. South Peninsula Chum Salmon Indexed Total Escapments by Section, 1962-1991<sup>a</sup> (Page 2 of 2)

Year	Thin Point	Merzhovoi Bay	Ikatan Bay	Unimak District	Becheviri <sup>b</sup> Bay
1962	14,200	7,700	42,000	0	48,500
1963	(9,000)	4,800	(1,000)	(0)	22,300
1964	19,500	37,100	(1,000)	0	(16,000)
1965	500	500	0	0	(1,800)
1966	3,000	7,700	700	600	10,000
1967	600	3,700	200	(0)	15,400
1968	3,100	12,700	2,000	0	19,800
1969	200	5,200	0	200	8,000
1970	6,300	6,400	300	0	(5,600)
1971	8,600	20,000	300	0	5,900
1972	17,000	12,900	400	200	11,200
1973	10,900	8,000	200	(500)	(7,500)
1974	5,200	7,900	1,000	(500)	(6,100)
1975	800	7,800	0	0	17,300
1976	7,400	9,900	200	(600)	38,300
1977	26,300	25,300	0	1,100	54,300
1978	10,400	13,000	200	0	29,500
1979	17,500	12,000	1,800	500	12,400
1980	11,800	14,000	0	1,000	41,000
1981	19,500	11,500	0	100	29,600
1982	15,000	14,000	200	0	20,100
1983	21,300	7,700	500	0	15,500
1984	23,000	22,400	0	0	30,400
1985	44,000	19,200	0	0	21,900
1986	39,600	6,500	0	100	15,500
1987	51,300	23,400	0	400	34,700
1988	17,500	10,100	5,200	1,100	25,000
1989	10,000	3,900	2,500	500	9,100
1990	20,100	6,400	800	1,000	13,300
1991	23,000	12,400	(3,000)	600	28,600

<sup>a</sup> Figures in parenthesis are extrapolated estimates<sup>b</sup> Becheviri Bay is considered part of the North Peninsula.

Table 62. Indexed total escapement of sockeye salmon in some North Peninsula Areas  
(Fish in Thousands)

Year	Ilnik River	Willie Creek	Ocean River	Sandy River	Bear River	Nelson Lagoon	Whaleback Mtn. Creek	Cristianson Ln. Crks.
1960	7.0	45.0	14.6 <sup>a</sup>	27.5	185.0	48.0	14.5	1.3
1961	4.5	12.6	0.6 <sup>a</sup>	57.3	200.0	138.2	-	-
1962	3.3	2.0	0.1 <sup>a</sup>	25.0	190.0	54.2	-	-
1963	4.6	2.8	2.5 <sup>a</sup>	38.6	200.0	31.0	12.5	0.7
1964	-	2.4	0.6 <sup>a</sup>	40.2	210.0	80.0	16.7	1.5
1965	7.0	2.7	2.3 ?	22.0	115.0	37.0	5.0	0.4
1966	14.0	12.6	4.2 ?	5.0	180.0	36.5	8.7	0.6
1967	14.0	3.8	5.0 ?	30.0	170.0	42.0	-	0.6
1968	11.2	-	0.6 ?	16.0	150.0	31.0	5.0	-
1969	-	-	0.5 <sup>a</sup>	45.0	361.0	78.5	30.0	3.0
1970	7.6	7.0	0.7 <sup>a</sup>	25.0	269.0	82.4	-	-
1971	9.0	16.1	1.0 <sup>a</sup>	30.0	251.0	60.1	27.5	2.0
1972	5.4	6.0	1.7 <sup>b</sup>	8.4	127.0	28.0	2.5	1.4
1973	13.1	1.7	1.2 <sup>b</sup>	5.1	125.0	18.7	4.0	0.1
1974	10.3	1.5	2.7 <sup>b</sup>	16.5	250.0	39.9	2.9	0.2
1975	18.0	5.3	17.2 <sup>b</sup>	40.0	270.0	138.6	10.0	0.4
1976	10.2	4.1	0.8 <sup>a</sup>	43.0	285.0	108.9	18.0	1.4
1977	9.2	8.2	3.2 <sup>a</sup>	50.2	215.0	155.0	12.5	1.2
1978	12.9	5.0	2.8 <sup>a</sup>	64.0	730.0	304.3	10.0	0.2
1979	79.2	6.0	12.0 <sup>a</sup>	61.0	952.0	360.1	24.4	1.0
1980	49.6	20.0	28.0 <sup>a</sup>	76.0	670.8	352.6	75.6	0.3
1981	-	-	- <sup>a</sup>	51.5	689.9	251.0	57.0	2.1
1982	12.0	13.6	16.9 <sup>a</sup>	61.3	300.0	179.6	25.0	0.5
1983	11.8	3.6	13.2 <sup>a</sup>	28.0	329.9	128.8	12.0	1.5
1984	12.4	3.7	- <sup>a</sup>	19.0	394.6	251.0	61.0	2.0
1985	13.1	3.6	4.3 <sup>a</sup>	11.5	440.0	318.5	24.4	1.4
1986	44.5	15.1	7.2 <sup>b</sup>	6.9	273.4	117.9	36.3	0.5
1987	15.2	8.5	7.0 <sup>b</sup>	8.7	252.4	155.7	23.8	0.4
1988	14.0	5.2	7.7 <sup>a</sup>	34.5	310.1	142.5	28.6	1.1
1989	12.0	4.3	0.2 <sup>a</sup>	36.0	451.0	206.8	45.0	1.7
1990	9.4	17.1	9.2 <sup>a</sup>	17.5	546.8	269.2	40.6	5.0
1991	10.1	26.0	99.0 <sup>a</sup>	75.2	606.0	279.2	61.0	1.5

<sup>a</sup>Years Ocean River emptied into Ilnik Lagoon.

<sup>b</sup>Years Ocean River emptied directly into Bering Sea.

Table 63. Indexed Total Escapement Of Chum salmon In Some Major North Peninsula Production Locations  
(Fish in thousands)

Year	Frank's Lagoon	Moller Bay	Herendeen Bay	Nelson Lagoon	Moffett Bay	Izembek Bay	St. Catherine Cove
1960	3.0	27.1	52.5	-	76.4	18.0	5.2
1961	3.5	14.4	24.0	9.1	-	11.0	-
1962	1.5	2.0	16.4	9.7	-	43.0	21.6
1963	0.5	5.4	13.5	7.0	91.5	44.0	6.6
1964	2.2	11.0	25.5	2.0	56.5	42.0	-
1965	1.2	-	5.6	4.0	-	9.5	0.6
1966	0.7	10.7	45.5	17.0	-	19.5	5.0
1967	-	-	19.3	29.8	17.8	15.0	3.6
1968	6.0	(3.6)	45.5	18.1	89.3	52.8	4.4
1969	-	-	10.0	13.0	72.3	23.0	6.3
1970	0.5	11.6	31.2	36.0	(32.3)	25.1	3.1
1971	0	4.4	10.2	19.0	28.0	26.1	3.8
1972	4.3	-	6.0	16.8	29.1	36.7	5.9
1973	0.6	(1.4)	2.8	12.7	41.1	27.0	8.4
1974	1.3	-	2.8	8.3	34.1	41.9	3.5
1975	2.6	(1.2)	6.3	4.5	35.8	38.3	12.7
1976	6.4	9.1	19.4	42.5	90.8	36.5	5.4
1977	10.0	32.2	77.5	83.3	254.9	126.5	14.6
1978	-	(9.8)	64.3	10.2	85.7	48.4	12.0
1979	5.6	13.0	18.0	37.0	130.0	48.0	5.2
1980	17.8	37.2	79.0	164.0	289.3	84.8	13.1
1981	22.1	34.2	50.1	57.0	187.0	48.0	10.0
1982	41.8	8.8	(152.3)	29.1	130.4	38.6	10.8
1983	15.0	16.4	108.0	14.0	115.5	57.2	8.3
1984	6.8	18.6	22.7	49.0	354.2	73.3	7.7
1985	5.2	6.9	64.8	13.0	138.8	59.9	7.5
1986	5.7	11.3	44.5	0.8	121.1	21.3	6.3
1987	4.9	19.6	69.0	5.2	217.6	68.4	17.9
1988	2.0	17.2	59.4	11.0	237.3	67.1	10.7
1989	2.2	6.5	76.9	0.8	57.2	33.4	5.1
1990	0.6	5.3	96.3	-	73.6	18.9	4.3
1991	-	3.8	52.0	-	135.5	36.9	16.5

- Insufficient data for estimate.

Q Estimate based on incomplete data.

Table 64. Sapsuk River Indexed Total Coho Salmon Escapements.

Year	
1979	17,000
1980	26,700
1981	30,000
1982	-
1983	13,000
1984	28,600
1985	17,500
1986	23,000
1987	27,500
1988	17,000
1989	32,000
1990	30,000
1991	33,000

Table 65. Peak and estimated total salmon escapement by district, species, and stream for the South Peninsula, 1991.

Stream Number	Stream Name/Location	Species							
		Sockeye		Cono		Pink		Chum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total
SOUTHEASTERN DISTRICT									
281-35.07	Bluff Point	0	0	0	0	2,200	3,322	0	0
281-35.06	Boulder Bay	0	0	0	0	300	821	1,800	3,420
281-35.05	Fox Bay	0	0	0	0	50	71	0	0
281-35.04	Fox Bay	0	0	0	0	0	0	1,400	2,400
281-35.02	Fox Bay	0	0	0	0	15,000	36,071	0	0
281-34.08	Island Bay	0	0	0	0	600	2,024	0	0
281-34.07	Island Bay	0	0	0	0	350	929	0	0
281-34.06	Island Bay	0	0	0	0	4,600	10,393	0	0
281-34.05	Island Bay	0	0	0	0	6,200	15,429	0	0
281-34.04	Unnamed	0	0	0	0	1,300	6,000	0	0
281-34.03	Stonehouse	0	0	0	0	24,600	69,857	0	0
281-34.02	Osterback	0	0	0	0	28,100	75,006	0	0
281-34.01	Granville-Portage Inlet	0	0	0	0	2,900	6,929	3,000	5,700
281-34.05	Stepovak River	0	0	0	0	20,000	30,100	35,000	42,982
281-33.06	Stepovak Flats	0	0	0	0	300	453	1,200	2,800
281-33.04	Big River	0	0	0	0	16,000	25,098	13,500	37,500
281-33.03	Louie's Corner	0	0	0	0	6,000	9,060	15,000	29,950
281-33.02	Ramsey Bay	0	0	0	0	5,000	7,550	15,000	26,167
281-33.01	Ramsey Bay	0	0	0	0	6,000	9,060	10,000	12,000
281-32.07	Grub Gulch	0	0	0	0	52,000	99,600	4,400	14,433
281-32.05	Clark Bay	0	0	0	0	15,500	32,167	2,800	5,320
281-32.04	Little Norway	0	0	0	0	33,000	55,488	4,900	6,747
281-31.03	Orzinski Lake Lake <sup>1</sup>	9,852	40,000	0	0	35,000	71,000	2,000	3,800
281-20.04	Windbound Bay	0	0	0	0	1,400	1,861	0	0
281-20.03	Chichagof Stream	0	0	0	0	0	0	2,500	4,500
281-20.02	Chichagof	0	0	0	0	23,000	67,333	3,800	7,220
281-20.01	Chichagof Bay	0	0	0	0	4,300	4,737	2,600	4,333
281-10.04	West Cove	0	0	0	0	1,900	2,869	0	0
281-10.03	Suzy Creek	0	0	0	0	49,000	83,718	0	0
281-10.02	Dorenoi Minor	0	0	0	0	1,200	2,197	0	0
281-10.01	Dorenoi Major	0	0	0	0	11,300	14,630	0	0

-Continued-



Table 65. (Page 2 of 8).

Stream Number	Stream Name/Location	Species							
		Scaevola		Cane		Pink		Sum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total
283-90.04	San Diego Bay	0	0	0	0	3,700	13,137	300	307
283-90.03	San Diego Lagoon	0	0	0	0	1,700	2,065	300	570
283-90.02	Rough Beach	0	0	0	0	11,400	12,381	0	0
283-90.01	Swedania Point	0	0	0	0	30,700	44,393	0	0
283-80.16	Ballast	0	0	0	0	0	0	0	0
283-80.15	Coleman	0	0	0	0	9,500	14,409	600	1,140
283-80.14	Johnson	0	0	0	0	15,000	25,083	250	257
283-80.12	Foster's Camp	0	0	0	0	800	1,653	200	253
283-80.11	Monolith Point	0	0	0	0	500	1,833	200	253
283-80.09	Foster's Creek	0	0	0	0	22,000	34,268	7,000	8,967
283-80.08	Lefthand Bay	0	0	0	0	16,000	27,576	7,000	11,286
283-80.06	Cape Aliaksin East	0	0	0	0	5,000	9,840	0	0
283-80.05	Cape Aliaksin Center	0	0	0	0	1,300	2,667	0	0
283-80.04	Cape Aliaksin West	0	0	0	0	13,000	18,017	0	0
283-70.05	Beaver River	0	0	0	0	16,700	18,273	11,000	13,650
283-70.04	Smiley's Creek	0	0	0	0	5,500	8,796	0	0
282-13.01	Unga Spit	0	0	0	0	0	0	0	0
282-13.02	Dry Lagoon	0	0	300	720	5,000	7,967	6,300	11,970
282-13.03	Bay Point	0	0	40	96	47,000	70,970	9,800	18,620
282-13.04	Pinnacle Point	0	0	125	300	1,900	3,067	0	0
282-13.05	Unnamed	0	0	0	0	200	302	0	0
282-10.02	Apollo Minor	0	0	0	0	4,500	7,493	0	0
282-10.03	Apollo Creek	0	0	0	0	13,400	29,080	0	0
282-10.04	Acheredin Lake	3,250	4,063	0	0	0	0	0	0
282-10.10	Unnamed	0	0	0	0	0	0	0	0
282-10.11	Apollo Gold Mine	0	0	0	0	12,000	21,730	0	0
282-10.12	Unga Cape	0	0	0	0	5,300	8,447	0	0
282-10.13	Baralof Bay	0	0	0	0	3,500	5,285	0	0
282-10.14	Squaw Harbor Minor	0	0	0	0	18,300	19,097	0	0

-Continued-

Table 65. (Page 3 of 8).

Stream Number	Stream Name/Location	Species							
		Sockeye		Coho		Pink		Chum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total
282-10.15	Squaw Harbor Major	0	0	0	0	53,000	108,591	0	0
282-10.16	Ben Green Bight	0	0	0	0	7,700	17,960	0	0
282-10.17	Sandy Beach	0	0	0	0	0	0	0	0
282-12.10	No Name	0	0	0	0	10	15	0	0
282-12.09	South Quartz Point	0	0	0	0	1,000	1,510	0	0
282-12.08	South Quartz Point	0	0	0	0	1,000	1,510	0	0
282-12.07	Zachary Bay	0	0	0	0	200	302	0	0
282-12.06	Zachary Bay	0	0	0	0	0	0	0	0
282-12.05	Zachary Bay	0	0	0	0	3,300	4,983	0	0
282-12.04	Zachary Bay	0	0	0	0	1,000	1,510	0	0
282-12.03	Zachary Bay	0	0	0	0	200	302	0	0
282-12.02	Zachary Bay	0	0	0	0	3,000	4,530	0	0
282-12.01	Zachary Bay	0	0	0	0	0	0	0	0
282-10.18	Humbolt Creek	0	0	10	24	1,400	2,114	0	0
282-11.01	Salmon Ranch	0	0	0	0	2,600	3,515	0	0
282-11.03	Fox Hole	0	0	0	0	1,900	2,250	0	0
282-11.06	Korovin Island	15	30	0	0	0	0	0	0
282-20.00	Sanborn Harbor	Not surveyed.							
282-20.03	Sanborn Harbor	Not surveyed.							
282-20.04	Sanborn Harbor	Not surveyed.							
282-20.05	Falmouth Harbor	Not surveyed.							
SOUTHEASTERN DISTRICT TOTAL :		13,117	44,093	475	1,140	712,310	1,300,794	161,850	276,545
SOUTH CENTRAL DISTRICT									
283-70.03	McGinty Point	0	0	0	0	12,000	35,127	0	0
283-70.02	East of Mino	0	0	0	0	100,500	156,122	0	0
283-70.01	Mino Creek	1,400	1,750	0	0	463,000	776,369	1,000	1,900
283-62.05	Coal Bay Major	0	0	0	0	132,000	144,464	0	0
283-62.04	Coal Bay Minor	0	0	0	0	31,700	36,803	0	0

-Continued-

Table 65. (Page 4 of 8).

Stream Number	Stream Name/Location	Species							
		Sockeye		Coho		Pink		Chum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total
283-62.03	Coal Bay Middle	0	0	0	0	0	0	0	0
283-62.02	Coal Bay	0	0	0	0	75	113	0	0
283-62.01	Cape Tolstoi	0	0	0	0	900	1,359	0	0
283-63.16	Settlement Point	0	0	0	0	186,900	283,785	4,000	5,200
283-63.15	Middle Creek	0	0	0	0	139,000	202,082	0	0
283-64.10	Ness Creek	0	0	0	0	3,500	7,733	0	0
283-64.09	Inner Canoe Bay	0	0	0	0	0	0	600	1000
283-64.08	Entrance Creek	0	0	0	0	9,300	16,267	1,500	3,240
283-64.	Wolverine Gulch	0	0	0	0	1,300	1,963	0	0
283-64.06	Canoe Bay	800	1,600	0	0	2,500	5,647	68,000	120,303
283-64.05	Bluff Point	0	0	0	0	4,300	6,382	2,600	4,807
283-63.14	Dry Lagoon	Not surveyed.							
283-63.13	Ruby's Lagoon	0	0	0	0	0	0	7,000	7,772
283-63.11	Chinaman Lagoon North	0	0	0	0	0	0	2,400	2560
283-63.10	Chinaman Lagoon Main	0	0	0	0	0	0	3,100	3,307
283-63.09	Chinaman Lagoon	0	0	0	0	0	0	0	0
283-63.06	Chinaman Lagoon South	0	0	0	0	0	0	500	567
283-63.05	Lower Chinaman Lagoon	0	0	0	0	0	0	1,300	1,521
283-63.04	Chinaman Stream South	0	0	0	0	0	0	400	467
283-61.05	Long John Lagoon	1,100	2,200	0	0	0	0	0	0
283-61.04	Spring Fed Streams	450	900	0	0	0	0	1,100	2,420
283-61.03	Long John Lagoon	0	0	0	0				
283-61.02	Southwest Stream	0	0	0	0	300	453	8,000	15,200
SOUTH CENTRAL DISTRICT TOTAL :		3,750	6,450	0	0	1,087,275	1,674,668	101,500	170,262

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Table 65. (Page 5 of 8).

Stream Number	Stream Name/Location	Species							
		Rocky		Coho		Pink		Chum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total
SOUTHWESTERN DISTRICT									
283-52.10	Dushkin Lagoon	Not surveyed.							
283-52.08	Volcano River	0	0	0	0	1,500	2,400	15,000	28,500
283-52.07	Volcano Center Sloughs	0	0	0	0	3,500	5,285	10,000	19,000
283-52.06	West Springholes	0	0	0	0	10,000	13,036	5,000	5,433
283-52.05	Streamguard Creek	0	0	0	0	2,000	3,020	0	0
283-52.04	Stub Creek	0	0	0	0	1,700	3,040	0	0
283-52.03	Little Bear Creek	0	0	0	0	2,400	4,640	400	773
283-52.01	Nikolaski Spit	0	0	0	0	10,700	16,157	0	0
283-51.03	Dolgoi Harbor Southwest	0	0	0	0	500	567	0	0
283-51.06	Dolgoi Harbor Southwest	0	0	0	0	6,100	7,922	0	0
0	0	0	0	0	0	0	0	100	151
283-51.03	Dolgoi Harbor								
283-41.01	Belkofski Village	0	0	0	0	21,000	23,706	300	310
283-42.12	Rocky River	0	0	0	0	19,000	19,249	0	0
283-42.10	Kitchen Anchorage	0	0	0	0	7,700	10,420	0	0
283-42.09	Captain's Harbor	0	0	0	0	300	690	0	0
283-42.07	Belkofski Bay River	0	0	0	0	2,500	3,775	24,000	28,814
283-42.06	Belkofski Bay Beach	0	0	0	0	800	1,923	0	0
283-42.05	Belkofski Bay West	0	0	0	0	2,500	3,614	0	0
283-42.03	Indian Head	0	0	0	0	8,500	21,200	0	0
283-33.05	Ram's Creek	0	0	0	0	24,000	36,240	300	570
283-33.04	King Cove Lagoon	0	0	0	0	0	0	100	190
283-33.03	King Cove Lagoon	0	0	0	0	0	0	300	570
283-31.01	Fox Island Anchorage East	0	0	0	0	17,600	28,877	0	0
283-31.02	Fox Island Anchorage Center	0	0	0	0	2,000	2,367	0	0

-Continued-

Table 65. (Page 5 of 8).

Stream Number	Stream Name/Location	Species							
		Rockyeye		Dove		Pink		Shum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total
283-31.03	Fox Island Anchorage West	0	0	0	0	35,100	38,597	0	0
283-31.05	Paw Cape Creek	0	0	0	0	3,900	11,840	0	0
283-31.06	Southern Creek	0	0	0	0	137,000	199,317	0	0
283-31.10	Eastern Creek	0	0	0	0	70,000	94,112	0	0
283-34.11	Lenard Harbor South	0	0	0	0	2,500	3,775	0	0
283-34.10	Lenard Harbor	0	0	0	0	3,800	5,738	8,000	15,200
283-34.09	Barney's Creek	0	0	0	0	21,000	31,625	2,500	4,750
283-34.07	Kinzarof Lagoon	2,100	4,200	0	0	0	0	900	1,710
283-34.06	Kinzarof Lagoon	500	1,000	0	0	0	0	0	0
283-34.05	Kinzarof Lagoon	600	1,200	0	0	0	0	0	0
283-34.03	Trout Creek	30	60	200	480	100	113	1,000	1,133
283-34.02	Russel Creek	100		200	400	960	5,000	7,617	49,900
119,953283-34.01	Mortensen	0	7,050	14,100	0	0	0	0	0
283-32.01	Old Man's Lagoon	0	0	0	0	0	0	1,400	2,462
283-20.06	Thinpoint Lagoon & Entrance Channel	20,300	40,600	0	0	0	0	0	0
283-20.08	Thinpoint West	Not surveyed.							
283-20.09	Thinpoint Lake Stream	4,400	8,800	0	0	0	0	0	0
283-20.10	Thinpoint Lake	2,500	5,000	0	0	0	0	0	0
283-20.04	Southwest Bight	0	0	0	0	5,200	10,747	0	0
283-20.03	Verskin's Bight	0	0	0	0	47,000	86,540	0	0
283-20.01	Sandy Cove Stream	0	0	0	0	1,700	8,207	20,000	38,920
283-11.01	Egg Island Stream	0	0	0	0	8,000	13,703	2,000	3,800
283-12.13	Little John Lagoon	0	0	0	0	1,300	2,595	6,000	6,080

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Table 65. (Page 7 of 3).

Stream Number	Stream Name/Location	Species							
		Scuprey		Coho		Pink		Chum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total
283-12.12	Little John Sand Spit	0	0	0	0	0	0	0	0
283-12.11	Cannery	0	0	0	0	0	0	400	760
283-12.05	Middle Lagoon	7,100	14,200	0	0	0	0	0	0
283-12.01	Hansen's	2,300	4,600	0	0	2,500	5,473	0	0
283-60.08	Deadman's Cove	1,900	3,800	0	0	6,000	10,560	0	0
284-60.07	Whalebone	2,200	4,400	0	0	400	720	0	0
284-60.06	Sankin Bay	0	0	25	60	200	302	0	0
284-60.05	Whirl Point	0	0	0	0	12,000	21,600	0	0
284-60.04	Ikatan River	0	0	0	0	900	1,359	0	0
284-60.03	Swade's Lake	220	440	0	0	250	450	0	0
284-60.01	Ikatan Point	0	0	25	60	300	700	0	0
SOUTHWESTERN DISTRICT TOTAL :		51,300	102,600	650	1,560	508,550	762,957	147,500	278,929
UNIMAK DISTRICT									
284-50.00	Dora Harbor Left	Not surveyed.							
284-40.09	Otter Cove	0	0	0	0	1,900	4,900	0	0
284-40.08	Otter Cove	0	0	0	0	400	720	300	540
284-40.05	Lazaref River	Not surveyed.							
283-10.	Sanak Village	Not surveyed.							
283-10.	Sanak Is. W.	Not surveyed.							
283-10.	Washwomen Creek	Not surveyed.							
283-10.??	Dodd's Bay E.	Not surveyed.							
283-10.	Sandy Bay	Not surveyed.							
283-10.	Salmon Bay	Not surveyed.							
UNIMAK DISTRICT TOTAL:		0	0	0	0	2,300	5,620	300	540
SOUTH PENINSULA									
TOTAL :		68,167	153,143	1,125	2,700	2,310,435	3,776,966	411,150	226,276

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Table 65. (Page 8 of 8)

<sup>1</sup> See Orzinski (Orzenof) Lake weir counts and total escapement; the highest daily weir count was used for the peak count.

Seven day stream life used for pink salmon escapements on the Kupreanof Peninsula.

Fifteen day stream life used for all pink and chum salmon escapements except Kupreanof pink salmon escapements.

For all pink and chum salmon escapements with only a peak count or where the computed value was less than the peak count, an expansion factor of 1.51 was used for pink salmon, and an expansion factor of 1.90 was used for chum salmon. The values were derived from the ratio of peak count to total estimated escapement for streams other than Kupreanof Peninsula streams where ascending, peak count, and descending counts were available.

Sockeye sockeye escapements were estimated by an expansion factor of 1.25 for Acheredin Lake, Baralof Bay, and Mino Creek. All other sockeye salmon escapements were estimated by an expansion factor of 2.0. Coho salmon escapements were estimated by an expansion factor of 2.4.

Table 66. Peak and estimated total salmon escapement by district, species, and stream for the Aleutian Islands Area, 1991.

Stream Number	Stream Name/Location	Species							
		Sockeye		Coho		Pink		Chum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total
302-40.11	Morge Cove	146	292	0	0	0	0	0	0
302-40.10	Humpy Cove	0	0	1	2	543	0	0	0
302-40.09	Summer Bay	Not surveyed.							
302-40.08	Unalaska Village	3	6	1	2	7,193	14,386	0	0
302-40.07	Pyramid Creek	0	0	0	0	0	0	0	0
302-40.06	Captain's Bay	0	0	0	0	1,200	2,400	26	52

Since only one survey was done for each stream, estimated total escapements for all species = Peak x 2.0.



Table 67. Peak and estimated total salmon escapement by district, species, and stream for the North Peninsula, 1991.

Stream Number	Stream Name/Location	Species									
		Chinook		Sockeye		Coho		Pink		Chum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total	Peak	Total
NORTHWESTERN DISTRICT											
311-20.15	Tugumak River	0	0	25	50	0	0	200	200	800	2,323
311-30.06	Divide Creek	0	0	2,400	4,800	0	0	0	0	0	0
311-30.05	Unnamed										
311-30.07	Whaleback	0	0	58,000	72,500	0	0	0	0	0	0
311-30.08	Christianson Lagoon	0	0	1,500	3,000	0	0	0	0	0	0
311-30.09	Mudhole	0	0	200	400	0	0	0	0	1,000	1200
311-30.10	Clear Lagoon	0	0	200	400	0	0	0	0	0	0
311-40.01	Emil's River	0	0	170	340	0	0	0	0	200	532
311-40.04	North Creek	0	0	0	0	0	0	0	0	0	0
311-50.01	Big River	0	0	0	0	0	0	0	0	1,600	4,656
311-50.02	Swanson's Lagoon	0	0	10,000	12,500	100	200	0	0	1,700	6,307
311-60.01	Mike's Valley	0	0	3	6	0	0	500	500	9,000	29,807
311-60.06	Anderson's	0	0	0	0	0	0	200	420	400	720
311-60.07	Traders Cove & .08	0	0	0	0	0	0	100	100	2,100	2,113
311-60.12	Warm Springs Bay	0	0	0	0	0	0	0	0	1,500	1,500
311-60.13	Hungry's Creek	0	0	50	100	0	0	200	213	0	
312-20.01	Norma Bay Lakes	0	0	110	220	0	0	0	0	0	
312-20.02	Mike's Duck Camp	0	0	0	0	0	0	0	0	1,700	5,753
312-20.03	Norma Bay South	0	0	0	0	0	0	0	0	5,900	11,603
312-20.04	Norma Bay South	0	0	0	0	0	0	0	0	800	800
312-20.52	2nd stream W of Frosty Cr.	0	0	400	800	0	0	0	0	500	1,455
312-20.51	Springs South of Frosty	0	0	200	400	0	0	0	0	1,000	2,910
312-20.05	Frosty Creek	0	0	0	0	0	0	0	0	7,500	18,596
312-20.06	Blue Bill Lake	0	0	10,100	20,200	0	0	0	0	0	0
312-20.13	Outer Marker Lake	0	0	3,000	6,000	0	0	0	0	300	417
312-40.00	Spring fed 2m SW of Joshua Green River	Not surveyed.									

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Table 67. (Page 2 of 5)

Stream Number	Stream Name/Location	Species									
		Chinook		Sockeye		Coho		Pink		Chum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total	Peak	Total
312-40.01	Joshua Green River	100	192	9,700	19,400	0	0	0	0	46,400	170,753
312-40.02	Moffet Springs Creek	0	0	400	800	0	0	0	0	23,700	57,340
312-40.03	Moffet Creek	0	0	1,100	1,375	0	0	0	0	19,200	47,740
NORTHWESTERN DISTRICT TOTAL:		100	192	97,558	143,291	100	200	1,200	1,433	125,300	366,581
NORTHERN DISTRICT											
313-10.02	North Creek	200	384	9,900	12,375	0	0	100	100	1,000	2,910
313-10.05	Cathedral River	0	0	10	20	0	0	0	0	0	0
313-10.06	Trader Mt.	0	0	0	0	0	0	0	0	200	582
313-10.11	Black Hills	200	384	0	0	0	0	0	0	0	0
313-10.14	Steelhead	130	250	0	0	0	0	0	0	0	0
313-30.01	David's River	1,300	2,496	4,300	5,375	1,000	2,000	0	0	0	0
313-30.02	Caribou River	0	0	2,650	5,300	0	0	0	0	0	0
313-30.03	Nelson River Hoodoo Lake <sup>1</sup>	4,800	9,216	38,612	256,323	33,000	79,200	0	0	0	0
313-30.03	Peterson	170	326	0	0	0	0	0	0	0	0
313-30.??	Coastal Lake	0	0	1,700	3,400	0	0	0	0	0	0
314-20.02	Doe Valley	0	0	0	0	0	0	0	0	600	1,280
314-20.03	Buck Valley	0	0	0	0	0	0	0	0	1,300	1,913
314-20.04	Deer Valley	0	0	0	0	0	0	0	0	2,800	5,173
314-20.05	Portage Valley	0	0	0	0	0	0	0	0	50	85
314-20.06	Grass Valley	0	0	100	125	0	0	0	0	15,300	24,027
314-20.07	Lawrence Valley	0	0	0	0	0	0	0	0	21,600	33,343
314-20.08	Mine Harbor	0	0	0	0	0	0	0	0	0	0
314-20.09	Coal Creek	0	0	0	0	0	0	0	0	1,100	2,533
314-30.04	Mud Bay	0	0	0	0	0	0	0	0	700	1,867
314-30.05	Mud Bay	0	0	0	0	0	0	0	0	500	667
314-30.07	Right Head Creek	0	0	0	0	0	0	0	0	100	291
314-30.09	Right Head Creek	0	0	0	0	0	0	0	0	600	1,500
314-30.10	Left Head Creek	0	0	0	0	0	0	0	0	1,600	2,133
315-10.01	Frank's Lagoon	0	0	0	0	0	0	0	0	200	227

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Table 67. (Page 3 of 5)

Stream Number	Stream Name/Location	Species									
		Chinook		Sockeye		Coho		Pink		Chum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total	Peak	Total
315-10.02	King Salmon	200	384	0	0	0	0	0	0	80	101
315-11.02	C-E Branches of Bear River <sup>2</sup>	200	384	49,134	135,000	0	0	0	0	0	0
315-12.00	Sandy River & Lake	60	115	75,200	94,000	0	0	0	0	0	0
316-10.01	Lime Creek	Not surveyed.									
316-10.02	Unnamed	Not surveyed.									
316-10.04	Three Hills	0	0	200	400	0	0	0	0	0	0
316-10.05	Ocean River	20	38	67,700	135,400	0	0	0	0	0	0
316-10.06	Willie Creek	0	0	23,400	29,250	0	0	0	0	0	0
316-20.01	Ilnik Estuary & River <sup>3</sup>	0	0	16,349	135,000	27,000	64,800	0	0	0	0
316-20.04	Unangashak River	0	0	0	0	1,500	3,600	0	0	0	0
317-2	Charles	100	192	800	1,600	0	0	0	0	300	873
317-4 A&B	Bluff Creek	550	1,056	5,300	10,600	0	0	0	0	1,000	2,910
317-6 A	Highland Creek	0	0	700	1,400	0	0	0	0	0	0
317-7 A	Meshik River	0	0	0	0	3,000	7,200	0	0	0	0
317-7 B	Braided Creek	150	288	100	200	0	0	0	0	400	1,164
317-7 C	Landlocked Creek	0	0	1,000	2,000	0	0	0	0	0	0
317-7 D	Landlocked Creek	0	0	4,700	9,400	0	0	0	0	0	0
317-7 E	Blue Violet	0	0	6,100	12,200	0	0	0	0	700	2,037
317-7 F	Wolf Creek	50		3,700	7,400	0	0	0	0	1,200	3,492
317-7 H	Shoe Creek	0	0	500	1,000	0	0	0	0	1,400	4,074
317-7 K	Unnamed	0	0	480	960	0	0	0	0	0	0
317-7 L	Unnamed	0	0	200	400	0	0	0	0	0	0
317-7 M	Unnamed	0	0	500	1,000	0	0	0	0	100	291
317-7 N	Unnamed	0	0	500	1,000	0	0	0	0	2,000	5,820
317-7 O	Bluff Cr., Branch of Landlocked Cr.	100	192	1,600	3,200	0	0	0	0	3,200	9,312
317-7 O-A	Plenty Bear Creek	0	0	100	200	0	0	0	0	1,600	4,656
317-7 P	Waterfall Creek	0	0	0	0	0	0	0	0	200	582
317-7 R	Rainbow Creek	0	0	0	0	0	0	0	0	400	1,164
317-7 T	Cub Creek	0	0	100	200	0	0	0	0	100	291

-Continued-

Table 67. (Page 4 of 5)

Stream Number	Stream Name/Location	Species									
		Chinook		Sockeye		Coho		Pink		Chum	
		Peak	Total	Peak	Total	Peak	Total	Peak	Total	Peak	Total
317-20.09	Barabara Creek	Not surveyed.									
317-20.08	Birthday Creek	0	0	100	200	0	0	0	0	800	2,328
318-20.04	Mud Creek	0	0	8,100	16,200	6,300	15,120	0	0	0	0
318-20.06 A	Cinder River	0	0	4,000	8,000	2,000	4,800	0	0	1,800	3,120
318-20.06 D	Lava Creek	0	0	24,000	48,000	0	0	0	0	100	291
318-20.06 E	High Creek	0	0	700	1,400	0	0	0	0	0	0
318-20.06 H	Meloy Creek	400	768	4,900	9,800	0	0	0	0	1,400	4,074
318-20.06 J	Wiggly Creek	100	192	4,500	9,000	0	0	0	0	500	1,455
318-20.06	Ray Creek	100	192	200	400	0	0	0	0	300	873
318-20.06 L	Unnamed	40	77	1,000	2,000	0	0	0	0	350	1,019
NORTHERN DISTRICT TOTAL:		8,870	16,934	249,023	1,040,955	73,800	176,720	100	100	65,580	128,457
NORTH PENINSULA TOTAL:		8,970	17,126	346,581	1,184,246	73,900	176,920	1,300	1,533	190,880	495,038

<sup>1</sup> See Nelson River weir counts, and total escapement. The highest daily weir count was used for the peak count for sockeye salmon.

<sup>2</sup> See Bear River weir counts, and total escapement. The highest daily weir count was used for the peak count for sockeye salmon. Other species counts are aerial survey counts from branches C-E of the Bear River.

<sup>3</sup> See Ilnik River weir counts, and total escapement. The highest daily weir count was used for the peak count for sockeye salmon. Ocean River and Willie Creek are tributaries of Ilnik in some years; therefore, the counts of these rivers are not included in district or peninsula totals.

Escapement determined from spawner abundance curves derived from aerial escapement surveys under fair or better visibility conditions and as assumed, 7 day average stream life for chum salmon in Swanson Lagoon, and a 15 day average stream life for all other chum and pink salmon. Where peak counts were greater than the calculated escapement, the peak count was expanded by 2.91 for chum salmon, determined by using the ratio of peak count to total estimated escapement where ascending, peak count, and descending counts were available. For pink salmon, the peak count was used in instances when the peak count exceeded the computed estimate.

-Continued-

Table 67. (Page 3 of 5)

Chinook estimated total escapement (peak x 1.92), sockeye (peak x 1.25 for Whaleback Mountain Creek, Swanson Lagoon, Moffet Creek, North Creek, David's River, Grass Valley, Sandy Lake, Willie Creek, and Ilnik Estuary and peak x 2.0 for other streams), and coho (peak x 2.4).

Table 68. Sandy River Sockeye Escapement Age Composition. (Fish in thousands) (Page 1 of 2)

Age Class	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
0.1	-	-	-	-	-	-	-	-	-	-
0.2	-	-	-	-	-	-	-	-	-	-
0.3	-	-	-	-	-	-	-	-	-	-
0.4	-	-	-	-	-	-	-	-	-	-
1.1	-	-	-	2.3	0.1	-	-	-	-	0.3
1.2	31.8	13.8	8.4	36.4	18.5	10.9	-	2.1	-	21.4
1.3	16.0	53.6	37.5	16.7	7.4	7.7	-	4.4	-	11.8
1.4	-	0.4	-	-	-	-	-	-	-	-
2.1	-	-	-	0.3	-	-	-	-	-	-
2.2	5.8	3.3	2.8	0.8	2.0	0.2	-	0.1	-	0.6
2.3	7.4	4.5	2.8	4.8	-	0.2	-	0.3	-	0.1
2.4	-	-	-	-	-	-	-	-	-	-
3.1	-	-	-	-	-	-	-	-	-	-
3.2	-	0.4	-	-	-	-	-	-	-	-
3.3	-	-	-	-	-	-	-	-	-	-
3.4	-	-	-	-	-	-	-	-	-	-
TOTAL	61.0	76.0	51.5	61.3	28.0	19.0	11.5	6.9	8.7	34.5

The 1988 and 1989 information was obtained from scale samples, otoliths were used during previous years. Escapements are indexed totals.

-continued-

Table 68. Sandy River Sockeye Escapement Age Composition. (Page 2 of 2)

<u>Age Class</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
0.1	-	-	-
0.2	0.1	-	-
0.3	0.1	-	-
0.4	-	-	-
1.1	0.1	-	-
1.2	7.7	-	-
1.3	25.7	-	-
1.4	-	-	-
2.1	0.3	-	-
2.2	0.4	-	-
2.3	1.6	-	-
2.4	-	-	-
3.1	-	-	-
3.2	-	-	-
3.3	-	-	-
3.4	-	-	-
<b>TOTAL</b>	<b>36.0</b>	<b>17.5</b>	<b>75.2</b>

The 1988 and 1989 information was obtained from scale samples, otoliths were used during previous years. Escapements are indexed totals.

Table 69. Bear River Sockeye Escapement Age Composition. (Fish in thousands) (Page 1 of 2)

Age Class	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
0.1	-	-	-	-	-	-	-	-	-	-
0.2	-	-	-	-	-	-	-	-	-	-
0.3	-	-	-	-	-	-	-	0.3	-	-
0.4	-	-	-	-	-	-	-	-	-	-
1.1	6.7	7.6	-	2.5	0.1	8.5	0.8	-	-	0.1
1.2	40.3	34.9	128.9	4.5	6.6	12.1	16.1	9.5	6.5	1.1
1.3	3.1	9.4	37.8	15.4	2.1	4.9	30.2	12.6	33.9	14.9
1.4	-	-	-	-	0.3	0.4	-	-	0.2	0.1
2.1	95.1	44.3	14.6	55.9	40.3	141.7	36.8	3.2	0.5	28.7
2.2	660.7	480.4	397.1	95.9	154.4	167.7	299.7	159.1	132.8	126.0
2.3	144.6	93.3	111.5	125.7	119.6	59.3	52.9	88.3	77.5	138.9
2.4	-	-	-	-	1.4	-	1.5	0.4	1.0	0.2
3.1	-	-	-	-	-	-	-	-	-	-
3.2	-	0.9	-	0.1	4.7	-	2.0	-	-	0.1
3.3	1.5	-	-	-	0.4	-	-	-	-	-
3.4	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>952.0</b>	<b>670.8</b>	<b>689.9</b>	<b>300.0</b>	<b>329.9</b>	<b>394.6</b>	<b>440.0</b>	<b>273.4</b>	<b>252.4</b>	<b>310.1</b>

-continued-



Table 69. Bear River Sockeye Escapement/Age Composition. (Page 2 of 2)

<u>Age Class</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
0.1	-	-	-
0.2	-	-	0.1
0.3	-	-	0.1
0.4	-	-	-
1.1	1.0	-	3.5
1.2	14.0	61.1	37.1
1.3	1.3	11.5	111.8
1.4	2.7	-	1.6
2.1	37.5	6.3	43.0
2.2	265.8	338.9	366.4
2.3	123.2	109.3	40.9
2.4	4.8	0.9	0.9
3.1	-	-	-
3.2	0.5	17.7	0.4
3.3	0.2	0.4	-
3.4	-	-	-
Other	-	-	0.2
<b>TOTAL</b>	<b>451.0</b>	<b>546.8</b>	<b>606.0</b>

Table 70. Nelson (Gapsuk) Sockeye Escapement Age Composition. (Fish in thousands) (Page 1 of 2)

Age Class	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
0.1	-	-	-	-	-	-	-	-	-	-
0.2	-	-	-	-	-	-	-	-	-	-
0.3	-	-	-	-	-	-	-	0.7	-	0.8
0.4	-	-	-	-	-	-	-	-	-	-
1.1	2.3	6.7	-	16.2	0.4	1.0	-	-	-	1.7
1.2	52.2	13.8	23.6	0.6	4.1	14.0	13.2	1.8	26.9	25.3
1.3	-	66.0	16.3	11.4	7.9	34.1	14.5	9.2	14.2	19.7
1.4	-	-	-	-	0.4	-	-	-	-	-
2.1	49.7	13.8	9.0	13.9	5.2	41.8	42.8	2.8	0.8	17.7
2.2	146.7	191.2	152.9	14.7	41.0	94.4	210.9	18.4	96.4	36.6
2.3	55.9	43.9	36.9	114.8	40.2	58.8	32.9	83.9	3.9	32.6
2.4	43.3	-	-	-	-	-	-	0.2	-	-
3.1	-	-	-	-	-	-	-	-	-	-
3.2	-	-	0.5	-	0.4	-	-	-	-	0.6
3.3	-	-	-	-	0.4	-	-	-	-	-
3.4	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<b>352.1</b>	<b>335.4</b>	<b>244.2</b>	<b>171.6</b>	<b>124.0</b>	<b>244.1</b>	<b>314.3</b>	<b>117.0</b>	<b>142.2</b>	<b>135.0</b>

-continued-

Table 70. Nelson (Sapsuk) Sockeye Escapement Age Composition. (page 2 of 2)

<u>Age Class</u>	<u>1989</u>	<u>1990*</u>	<u>1991</u>
0.1	-	-	-
0.2	-	-	0.5
0.3	-	1.6	0.2
0.4	-	0.1	
1.1	0.3	-	2.9
1.2	27.7	7.8	49.5
1.3	15.1	37.5	27.4
1.4	-	0.2	-
2.1	6.8	-	3.9
2.2	131.4	79.9	144.1
2.3	11.0	107.3	39.9
2.4	0.5	1.2	-
3.1	0.1	-	-
3.2	0.1	4.0	-
3.3	-	1.1	-
3.4	-	-	-
Other	-	-	-
<b>TOTAL</b>	<b>193.0</b>	<b>240.7</b>	<b>268.4</b>

\*In 1990, Nelson Lagoon catch samples were used as the escapement samples were lost in the mail. The catch samples were taken by gillnet gear and are not an accurate measure of escapement age composition.

Table 71. Ullila Bay, Meshik River, Ilnik Lagoon and Ornel Sockeye Percentage Composition, 1986-1991

<u>Ullila Bay</u>										
<u>Year</u>	<u>0.2</u>	<u>0.3</u>	<u>0.4</u>	<u>1.1</u>	<u>1.2</u>	<u>1.3</u>	<u>1.4</u>	<u>2.2</u>	<u>2.3</u>	<u>2.4</u>
*1986	1.1	45.1	0.1	0	3.6	48.1	0.5	0.1	1.4	0
*1987	0.2	50.7	0	0	6.5	32.5	1.4	0	0.5	0
*1988	8.2	21.9	2.2	0	9.5	55.5	0	0.7	1.9	0
*1989	2.7	44.5	0.6	0	9.6	40.6	0.6	0.6	0.8	0
*1990	3.1	46.2	1.9	0	6.2	32.1	0.2	0.5	2.8	0
*1991	12.8	25.6	0.9	0	9.1	49.5	0.1	0.1	1.9	0

Swanson Lagoon

<u>Year</u>	<u>0.2</u>	<u>0.3</u>	<u>0.4</u>	<u>1.1</u>	<u>1.2</u>	<u>1.3</u>	<u>1.4</u>	<u>2.2</u>	<u>2.3</u>	<u>2.4</u>
*1990	0	6.6	0	0	10.0	48.7	1.1	6.3	27.3	0
1991	-	-	-	-	-	-	-	-	-	-

Izembek-McFett Bays

<u>Year</u>	<u>0.2</u>	<u>0.3</u>	<u>0.4</u>	<u>1.1</u>	<u>1.2</u>	<u>1.3</u>	<u>1.4</u>	<u>2.2</u>	<u>2.3</u>	<u>2.4</u>
*1991	1.4	1.9	0	0	30.1	59.9	0.2	2.2	4.3	0

\*Samples are from commercial catch, dominantly seined

Ilnik Lagoon

<u>Year</u>	<u>0.2</u>	<u>0.3</u>	<u>0.4</u>	<u>1.1</u>	<u>1.2</u>	<u>1.3</u>	<u>1.4</u>	<u>2.1</u>	<u>2.2</u>	<u>2.3</u>	<u>2.4</u>
1986	0.9	53.9	0	0	1.3	37.3	0.1	0	0.9	5.5	0
1987	2.3	40.7	7.0	0	1.2	44.2	1.2	0	1.2	2.3	0
1988	1.7	40.6	1.5	0.2	5.8	43.0	2.0	0	0.9	3.9	0.4
1989	0.6	3.2	4.8	0.3	3.8	73.3	3.8	0	2.5	7.6	0
1990	0	7.8	0.8	0	50.6	23.7	5.3	0	6.1	5.7	0
1991	0.2	5.1	0	0.2	0.8	90.8	0.2	0.2	0.1	2.4	0

Meshik River

<u>Year</u>	<u>0.2</u>	<u>0.3</u>	<u>0.4</u>	<u>1.1</u>	<u>1.2</u>	<u>1.3</u>	<u>1.4</u>	<u>2.1</u>	<u>2.2</u>	<u>2.3</u>	<u>2.4</u>
1988	4.0	28.4	41.1	0	0.9	9.3	12.0	0	0.6	1.5	2.2
1989	2.5	20.7	1.0	0	7.8	47.9	1.2	0.6	1.9	16.3	0.2
1990-91	-	-	-	-	-	-	-	-	-	-	-

Ornel (Orlnski) River

<u>Year</u>	<u>0.2</u>	<u>0.3</u>	<u>0.4</u>	<u>1.1</u>	<u>1.2</u>	<u>1.3</u>	<u>1.4</u>	<u>2.1</u>	<u>2.2</u>	<u>2.3</u>	<u>3.3</u>
1990	0	0	0	0.4	48.4	12.5	0.4	2.8	21.0	14.1	0.4
1991	0.7	0.5	0	0.2	29.3	38.5	0	0.9	27.2	2.8	0

Table 72. 1991 Subsistence Salmon Harvest (Numbers of Fish)

Community	Permits Issued	Permits Returned	Percent Returned	Projected Harvest (Fish)					Total
				Chinook	Sockeye	Coho	Pink	Chum	
Sand Point	84	69	82.1	381	6,335	1,103	1,231	2,653	11,948
King Cove	60	29	48.3	0	1,477	3,611	225	386	5,699
Cold Bay	23	19	82.6	0	517	30	6	4	557
False Pass	17	11	64.7	17	724	500	354	165	1,760
Nelson Lagoon	8	8	100.0	20	370	139	1	4	534
Port Heiden	6	6	100.0	29	375	25	3	120	562
<b>Sub-Total</b>	<b>193</b>	<b>142</b>	<b>71.7</b>	<b>457</b>	<b>9,993</b>	<b>5,413</b>	<b>1,820</b>	<b>3,972</b>	<b>21,030</b>
Non-local Alaska Residents	51	43	84.3	1	1,347	138	58	179	1,723
<b>Total Alaska Peninsula Area</b>	<b>249</b>	<b>185</b>	<b>74.3</b>	<b>458</b>	<b>11,345</b>	<b>5,551</b>	<b>1,878</b>	<b>3,551</b>	<b>22,783</b>
<b>Unalaska</b>									
Local Residents	89	48	53.9	0	1,294	666	1,075	45	3,080
Non-local Residents	0	0	0	0	0	0	0	0	0
<b>Total Unalaska</b>	<b>89</b>	<b>48</b>	<b>53.9</b>	<b>0</b>	<b>1,294</b>	<b>666</b>	<b>1,075</b>	<b>45</b>	<b>3,080</b>

Average Subsistence Salmon Catch Per Successful Permit

Community	Chinook	Sockeye	Coho	Pink	Chum	Total
Sand Point	5.6	96.1	16.3	18.1	39.6	175.7
King Cove	0	32.1	78.5	4.9	8.4	123.9
Cold Bay	0	27.2	1.6	0.3	0.2	29.3
False Pass	1.0	42.6	29.4	20.8	9.7	103.5
Nelson Lagoon	2.5	46.3	17.4	0.1	0.5	66.8
Port Heiden	9.8	93.8	6.3	0.8	30.0	140.7
Unalaska	0	23.1	11.9	19.2	0.8	55.0
Non-local Alaska Residents	0.3	42.1	4.3	1.8	5.6	54.1

Table 73. Subsistence Salmon Harvest by Species (in Numbers of Fish) by Community - Alaska Peninsula Area and Unalaska.

SAND POINT							
Year	Permits Issued	Chinook	Sockeye	Coho	Pink	Chum	Total
1985	80	30	1,410	1,633	420	1,146	4,692
1986	75	45	2,508	1,208	1,550	1,005	6,323
1987	84	87	2,018	1,508	1,160	1,114	5,387
1988	74	146	2,694	853	1,326	1,175	6,194
1989	96	53	6,317	1,050	731	1,149	9,330
1990	80	160	5,648	620	429	1,051	7,908
1991	84	420	6,633	1,092	1,280	2,772	12,180

KING COVE							
Year	Permits Issued	Chinook	Sockeye	Coho	Pink	Chum	Total
1985	39	0	784	3,292	105	20	4,201
1986	24	2	1,834	919	14	120	2,889
1987	39	3	2,320	1,662	206	334	4,525
1988	23	3	555	2,855	265	43	3,721
1989	39	3	1,982	1,973	294	690	4,942
1990	43	24	1,054	2,832	265	367	4,542
1991	60	0	1,477	3,611	225	386	5,699

COLD BAY							
Year	Permits Issued	Chinook	Sockeye	Coho	Pink	Chum	Total
1985	10	0	293	84	34	3	414
1986	18	0	184	264	14	26	488
1987	10	0	293	84	34	3	414
1988	24	0	737	66	2	0	805
1989	18	0	231	55	4	22	312
1990	14	0	322	70	1	22	415
1991	23	0	517	30	6	4	557

FALSE PASS							
Year	Permits Issued	Chinook	Sockeye	Coho	Pink	Chum	Total
1985	10	30	578	1,858	13	395	2,874
1986	12	13	158	215	188	299	873
1987	12	14	103	443	163	389	1,112
1988	10	11	401	834	29	192	1,467
1989	7	0	231	55	4	22	312
1990	9	1	170	193	19	79	462
1991	17	17	724	500	354	165	1,760

NELSON LAGOON/PORT MOLLER							
Year	Permits Issued	Chinook	Sockeye	Coho	Pink	Chum	Total
1985	9	5	207	252	2	0	466
1986	9	13	284	302	3	5	607
1987	10	22	245	254	5	14	540
1988	13	26	284	184	0	25	519
1989	9	21	250	227	0	11	509
1990	8	11	291	224	0	0	526
1991	8	20	370	139	1	4	534

-continued-

Table 73 (page 2 of 2)

## PORT HEIDEN

Year	Permits Issued	Chinook	Sockeye	Coho	Pink	Chum	Total
1985	6	9	176	0	0	0	185
1986	4	23	252	0	0	0	310
1987	10	66	193	229	0	36	524
1988	10	69	268	134	23	105	599
1989	4	7	222	28	1	4	262
1990	3	21	107	20	0	27	175
1991	6	39	775	25	3	120	562

## TOTAL ALASKA PENINSULA AREA

Year	Permits Issued	Chinook	Sockeye	Coho	Pink	Chum	Total
1985	134	74	3,448	7,172	574	1,564	12,832
1986	142	101	5,247	2,908	1,779	1,455	11,490
1987	185	192	5,499	4,251	1,547	1,941	13,430
1988	159	255	4,939	4,926	1,645	1,540	13,305
1989	163	88	9,368	3,433	1,205	1,923	16,017
1990	166	217	7,592	3,959	714	1,546	14,028
1991	198	457	9,998	5,413	1,820	3,372	21,060

## UNALASKA

Year	Permits Issued	Chinook	Sockeye	Coho	Pink	Chum	Total
1985	65	0	897	208	1,293	20	2,418
1986	121	0	3,449	847	2,468	375	7,139
1987	81	0	1,097	378	1,780	151	3,406
1988	74	1	962	390	2,626	83	4,062
1989	70	2	1,064	470	1,292	36	2,864
1990	94	4	2,357	681	1,428	100	4,570
1991	89	0	1,294	666	1,075	45	3,080

Table 74. 1991 Mortensen's Lagoon subsistence and commercial sockeye and coho salmon harvests.

	<u>Estimated Permits</u>	<u>Sockeye</u>	<u>Coho</u>
Cold Bay Residents	19	517	30
King Cove Residents	2	100	0
Out of Area Residents	<u>21</u>	<u>527</u>	<u>53</u>
Total	42	1,144	83

The number of permit holders fishing Mortensen's Lagoon and the number of fish caught are extrapolated from returned permits.

	<u>Boats</u>	<u>Sockeye</u>	<u>Coho</u>
Commercial Harvest	5	1,065	90

The commercial harvest includes all of statistical area 284-62 (formerly 283-32), some of the fish may have been destined for systems other than Mortensen's Lagoon.

<u>Escapements</u>	
<u>Sockeye (Indexed Total)</u>	<u>Coho</u>
7,050	-



Table 75. 1991 Thin Point Cove Sockeye and Coho Harvests

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Subsistence Fishery

<u>Estimated Permit Holders<sup>a</sup></u>	<u>Sockeye</u>	<u>Coho</u>
27	913	3,154

Commercial Fishery

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<u>Permit Holders<sup>b</sup></u>		
15	<u>4,865</u>	<u>14,230</u>
Total Harvest	5,744	17,267

<sup>a</sup>The number of subsistence permit holders fishing Thin Point Cove and the number of fish caught are extrapolated from permit returns. All subsistence fishermen fishing Thin Point Cove during 1991 are estimated to be King Cove residents.

<sup>b</sup>The commercial information came from fish tickets.

The indexed total sockeye escapement was 35,800. This figure is probably close to but less than the actual figure. The peak coho estimate was 1,200, however the total escapement was likely somewhat higher.

Table 76. 1991 Reese Bay (Unalaska Island) Subsistence Salmon Harvest

<u>Estimated Permits<sup>a</sup></u>	<u>Sockeyes</u>	<u>Cohos</u>	<u>Pinks</u>
35	1,180	0	0

<sup>a</sup>The number of permit holders and number of fish caught are extrapolated from returned permits.

Table 77. Estimated Mortensen Lagoon, Thin Point Cove, and Reese Bay Subsistence Harvests 1982 - 1991

Year	Mortensen's Lagoon			Thin Point Cove			Reese (Wislow) Bay		
	(Estimated) Permits	Sockeye	Coho	(Estimated) Permits	Sockeye	Coho	(Estimated) Permits	Sockeye	Coho
1982	30	590	1,145	-	-	-	-	-	-
1983	41	300	1,600	-	-	-	-	-	-
1984	27	745	500	-	-	-	-	-	-
1985	22	590	831	-	-	-	23	669	0
1986	12	362	178	15	1,586	656	20	2,824	0
1987	22	604	254	15	1,226	966	20	806	0
1988	21	737	66	17	488	2,196	21	792	0
1989	19	420	28	17	1,479	1,239	12	436	16
1990	27	745	95	29	751	2,578	12	1,421	160
1991	42	1,144	83	27	913	3,154	35	1,180	0
AVERAGE	26	624	478	20	1,074	1,798	25	1,161	25

Table 78. Average Subsistence Salmon Harvest (In Numbers of Fish) Per Successful Permit Holder Alaska Peninsula Area and Unalaska

<u>Community</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
Sand Point	101	119	123	152	176
King Cove	156	149	155	134	124
Cold Bay	43	38	25	32	29
False Pass	101	163	126	69	104
Nelson Lagoon/ Port Moller	77	58	57	66	67
Port Heiden	52	86	87	88	141
Unalaska	79	78	58	55	55

Table 79. 1991 Estimated Adak-Kagalaska Islands Personal Use Salmon Catches.

Permit Holders	37
Number of Returned Permits	32 (86.5%)
Number of Returned Permits Reporting Catch	10 (31.3% of returned permits)
Estimated Number of Permit Holders That Caught Salmon	12

Average Catch Per Successful Permit Holder

<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pinks</u>	<u>Chums</u>	<u>Total</u>
0	23.4	0.5	2.8	0	26.7

Estimated Total Catch

<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pinks</u>	<u>Chums</u>	<u>Total</u>
0	281	6	34	0	321

Approximately 60% of the sockeye were caught at Quail Bay on Kagalaska Island with the remainder taken at Hidden Bay on Adak Island.

Table 80. Adak-Kagalaska Islands Estimated Personal Use Salmon Catches 1988-91

<u>Year</u>	<u>Permits Issued</u>	<u>Permits Returned</u>	<u>Percent Returned</u>	<u>Estimated Catch</u>					
				<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pinks</u>	<u>Chums</u>	<u>Total</u>
1988	43	29	67.4	0	503	23	150	0	676
1989	64	47	73.3	0	382	0	117	0	499
1990	61	29	47.5	0	800	47	41	0	888
1991	37	31	86.5	0	281	6	34	0	321

THE INCIDENCE OF IMMATURE SALMON IN SOUTH PENINSULA  
PURSE SEINE FISHERIES, 1963-91

By

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and

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## ABSTRACT

By state policy, commercial purse seine fisheries in South Peninsula waters of the Alaska Peninsula Management Area will be closed by emergency order when excessive by-catch of immature salmon occurs (ADF&G 1990). In making a decision to close a fishery the department considers average number of immatures per set, fleet distribution, and historical dates of immature salmon occurrence. The Alaska Department of Fish and Game has been instructed by the Alaska Board of Fisheries to utilize results from subsistence, commercial periods, and test fishing to evaluate the abundance of immature salmon. Because the catch of immature salmon is limited to purse seine gear, gill net gear may continue to operate during periods when the seine fishery is closed by emergency order due to the presence of immature salmon.

In 1963, the South Peninsula commercial salmon fishery was closed for the first time due to the presence of immature salmon. The fishery was also closed in 1968, 1969, 1974, 1979, 1989, 1990, and 1991 due to immature salmon by-catch problems. Sockeye (*Oncorhynchus nerka*) and chum (*O. keta*) salmon were the primary immature salmon species caught in purse seine gear.

In recent years a change in the species composition of immature salmon has occurred. Prior to 1975, about 90% of the immature salmon caught in the Shumagin Islands Section were sockeye salmon. After 1988, the immature catch has been about 50% sockeye and 50% chum salmon.

Immature salmon stock identification studies have not occurred.

KEY WORDS: Alaska Peninsula, sockeye, chum, salmon, immature, seine, by-catch

## INTRODUCTION

The South Peninsula area of the Alaska Peninsula Management Area consists of Pacific Ocean coastal waters extending west of Kupreanof Point to Scotch Cap on Unimak Island (Figure 1).

During normal fishing operations, immature salmon of three species are inadvertently caught in purse seine gear: chinook salmon (*Oncorhynchus tshawytscha*), sockeye salmon (*O. nerka*), and chum salmon (*O. keta*; M. Stopha, Alaska Department of Fish and Game, Sand Point, personal communication).

In the Shumagin Islands Section, most purse seine fishing effort occurs in the near shore waters of Popof Island at Popof Head, Middle Set, and Red Bluff (Figure 2). Deep water offshore of the beach allows nets to be deployed close to the shore. Twenty-minute sets, in vessel rotation, are used to catch salmon migrating westward.

Historically, the presence of immature salmon in South Peninsula waters has caused the curtailment of all commercial fishing in effected areas during late June or July in 1963, 1968, 1969, 1974, and 1979 and purse seine fishing in 1989-91 (Shaul et al. 1991, McCullough 1991). After 1979, regulations were adapted curtailing only purse seine fishing in effected areas. The problem associated with immature salmon is restricted to the purse seine fleet. Immature salmon are gilled in the seine webbing resulting in what is likely a 90-100% mortality factor (R. Guthrie, Alaska Department of Fish and Game, Sand Point, personal communication). By regulation, seine mesh size may not be more than 3 1/2 inches except the first 25 meshes above the lead line which may not be more than 7 inches (ADF&G 1990). By regulation, gill net mesh size can not be less than 5 1/4 inches; the larger mesh size in gill net gear allows for unrestricted passage of immature salmon through gill net gear (M. Stopha, Department of Fish and Game, Sand Point, personal communication).

Historically, immature salmon cause the greatest problem in the Shumagin Islands Section. Catches of immature salmon were first brought to the attention of the Alaska Department of Fish and Game (ADF&G) in 1963. Currently, about 55 purse seine permit holders must either remain on the beach or move to other open areas that are not as productive as the Shumagin Islands Section or the waiting period at favored sites is extended by their presence. Immature salmon usually migrate out of the Shumagin Islands Section by July 23 (G. Davenport, Alaska Department of Fish and Game, Sand Point, personal communication). In 1990 purse seine gear closures remained in effect until July 25 (Shaul et al. 1991).

Test fishing results in the Shumagin Islands Section is also used as a indication of the likelihood of the presence of immature salmon in other management areas. In 1991, the Mitrofanina Section of the Western District of the Chignik Management Area was closed due to immature salmon from July 11 to August 8, and the entire Western and Perryville Districts were closed from August 8-11.

The objective of this report is to present personal communications and test fish results on the occurrence of immature salmon from the South Peninsula. This information will provide a data base for evaluating management goals and is intended as a reference document; interpretation and discussion of the data are therefore limited.

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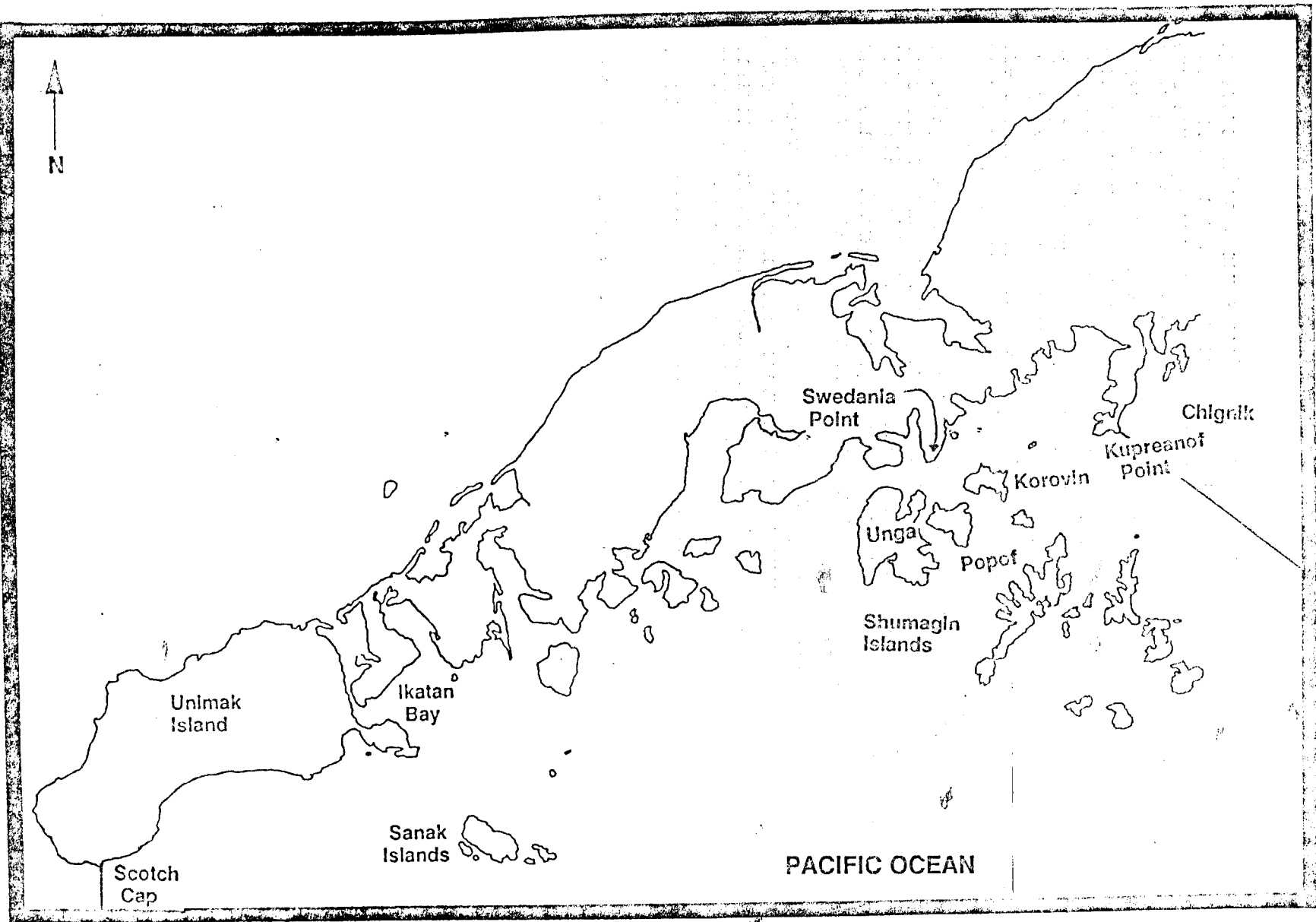


Figure 1. Map of the South Peninsula, the study area on the Pacific Ocean portion of map is from Kupreanof Point to Unimak Island.

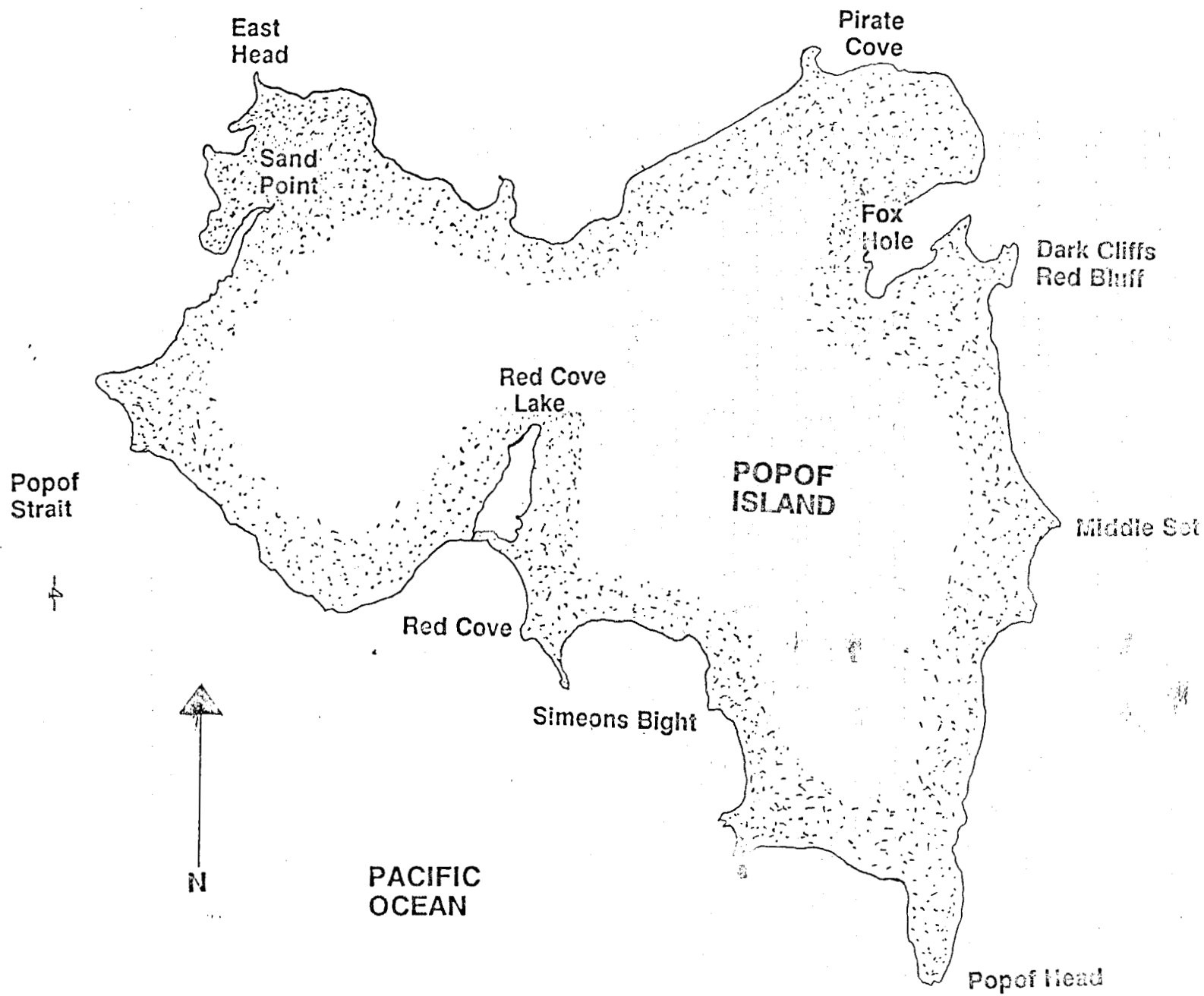


Figure 2. Map of Popof Island with the test fishing sites defined.

In 1990, test fishing was standardized to purse seine gear making 20 minute sets and fully pursing the gear. The test fish project used commercial purse seines that are 250 fathoms in length and 375 meshes in depth. The seine mesh is 3 1/2 inches except the first 25 meshes above the lead line is usually seven inch mesh. The test fish project and commercial fishermen do not use leads in the Shumagin Islands Section. Sites used to set the gear included: Popof Head, Middle Set, and Red Bluff; additional sets were made ~~at~~ time allowed. If large numbers (greater than 1,000) of immature salmon were observed being gilled during any set, the set could be terminated prior to the 20 minute time limit. Each day a permit holder was randomly selected from a list of permit holders interested in the test fishery. The standard ADF&G short term vessel charter agreement between the State of Alaska and the vessel owner was used. The permit holder supplied all necessary fishing material and crew, while ADF&G supplied a biologist to count and identify by species the number of immature and mature salmon per set. Immature salmon were defined as any salmon gilled in seine webbing and weighing less than three pounds per fish; this was also the weight below which buyers refused to pay for salmon. Mature salmon were sold to pay charter cost and immature salmon were dumped at sea unless they could be given away for subsistence use. During off-loading the mature catch was separated by species, counted, and weighed.

Prior to 1990 test fishing was not documented in detail. Although similar to current test fishing in sites fished and duration of sets, the pre-1990 test fishery differed in that a single vessel was chartered for the duration of the test fishery.

Catches were occasionally sampled from purse seine gear in the Shumagin Islands Section. Immature salmon gilled in seine web were randomly sampled. Since all catch sampling occurred before sorting within the fishing vessel and cannery, there was no preselection of immature salmon; although not tested, each sample was assumed to be representative of the by-catch within the Shumagin Islands Section. While this insured that samples were randomly selected from each fishing vessel sampled, the samples may not be characteristic of the population structure because the distribution of the population is unknown in the fishery.

Age was determined by examining scales (Bilton and Ricker 1965; Mosher 1968). Scales were removed from the preferred area, which was located on the left side of the salmon two rows above the lateral line in an area transacted by the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (INPFC 1963). One scale was taken from each salmon. A microfiche reader was used to read an acetate impression of the scale (Clutter and Whitesel 1956). Ages were recorded in European notation in which the first digit is the number of winters the salmon spent in freshwater, and the second digit is the number of winters the salmon spent in the ocean (Mosher 1968). The total age is the sum of these two numbers plus one to account for the incubation time. The accuracy of age determination was not tested, but prior data on sockeye salmon indicate a 98% agreement rate between experienced readers (McCullough 1989).

Length measurements were taken from mid-eye to the fork of the tail using a caliper or meter stick measuring to the nearest 1 mm. Accuracy of a length

measurement was within  $\pm 5$  mm. Mean lengths were calculated from an unweighted composite of the data collected from the samples.

Gonad weight measurements were taken using a triple beam balance scale with 0.1 g gradations; weights were recorded to the nearest 0.1 g. Accuracy of a weight measurement was within  $\pm 0.2$  g. Mean weights were calculated from an unweighted composite of the data collected from the samples.

Sex compositions and sexual maturity were computed for each sample. Sex and sexual maturity was determined by internal observation of the gonads.

## RESULTS AND DISCUSSION

### 1963 Season

On July 9, 1963, ADF&G reported that about 50% of the 16,000 salmon caught on July 5 was composed of small sockeye salmon (G. Davenport, Alaska Department of Fish and Game, Sand Point, personal communication). The salmon were reportedly gilled in the 3 1/2 inch web of purse seine gear but not in the 4 inch web. Some of these small salmon were examined by the Area Management Biologist, Glen Davenport, on July 6 and identified as immature sockeye salmon, full of feed, and stomach-burned by time of delivery in King Cove. Attempts to process the immature salmon were unsuccessful. Area processors subsequently agreed not to buy immature salmon in an attempt to move fishing vessels away from the problem areas. Fishermen continued fishing in problem areas and ADF&G closed the Southeastern District until most of the immature salmon migrated out of the area (July 11-14).

### 1968 Season

In 1968, Richard Guthrie, Assistant Area Management Biologist, in Sand Point was informed by several commercial fishermen of immature sockeye salmon in the Shumagin Islands on July 2, and that they increased in abundance through July 5 (R. Guthrie, Alaska Department of Fish and Game, Sand Point, personal communication). By July 5, up to 500 immature salmon per set were caught.

The fishery was closed through the weekend (July 6-7). On July 8, the fishery reopened with Mr. Guthrie aboard a purse seine vessel as an observer. While waiting to make a set, Mr. Guthrie observed other sets and estimated 220 immature salmon in one set, about 270 in a second set, and 700 in a third set. About 560 immature salmon were caught during the first set of the vessel he was aboard. The immature catch was about 90% sockeye salmon, and the remainder chinook and chum salmon. The Shumagin Islands Section was closed to all gear types on July 8.

From July 9-19, a daily test fishery was conducted. During the July 9 through July 16 test fishery, each set averaged 450 immature salmon, of which 90% were sockeye salmon and the remainder chinook and chum salmon. From July 17-19, the catch of immature salmon decreased to less than 50 per set, and by July 22 the catch was less than 10 per set (mostly chinook and chum salmon).

In a commercial opening on July 20, an average of 56 immature salmon per set were caught during the morning sets; with the average decreasing during the day. Observations on July 21-23 indicated a decreasing incidence of immature salmon, with only 10 per set caught on July 23. The mortality of the gilled salmon was estimated at about 95%.

A total of 160 immature sockeye salmon were sampled. The sample was 65% females and 34% males. Males averaged 348 mm in length and females 332 mm. Female egg skeins were about 1/4 inch wide and two inches in length. The sockeye were age 2.1 (88%), age 2.2 (3%), age 1.1 (7%), and age 1.2 (2%). Of 12 immature chinook salmon sampled, 92% were females and 8% were males; the 12 fish sample averaged 334 mm in length. Of 8 chum salmon sampled, 75% were females and 25% were males; average length was 346 mm.

In 1968, about 16 to 18 purse seine permit holders normally fished the Shumagin Islands Section, making about 60 sets per day. Mr. Guthrie estimated that if the fishery had not been closed 25,000 to 30,000 immature salmon per day would have been caught. The fishery was closed July 8-19, allowing an estimated 400,000 immature salmon to escape the fishery.

Mr. Guthrie reported that fishermen made sets up to two miles offshore and still found large numbers of immature salmon, although the immature salmon were not as abundant as inshore sets.

#### 1969 Season

On July 8, 1969, Richard Guthrie monitored six fishing vessels at Popof Head. He observed seven sets and noted that the number of gilled immature salmon per set exceeded 200, with two sets catching more than 500 immature salmon. The Shumagin Islands Section was closed to commercial salmon fishing on July 9. On July 9, a test fishery was conducted using a commercial purse seine vessel and the usual vessel crew. One to two sets per day were made with the net held open for 20 minutes each set, but less when there were indications were that an excessive number of immature salmon would be caught. Results of the test fishery are as follows:

Date	Number Sets	Time Per Set (min)	Number Immature Salmon Per Set	Total Number Adults
July 9	2	20	371	30
July 10	1	20	450	68
July 11	1	20	2,500	190
July 12	1	25	770	55
July 13	1	15	1,100	40
July 14	1	10	740	120
July 15	1	10	320	200
July 16	2	20	157	78
July 17	2	10, 15	140	287
July 18	2	20	115	220
July 19	2	20	29	44

In 1969, the Shumagin Islands Section was reopened to commercial salmon fishing on July 19. Observations and test fishing on July 19 indicated that about 20 to 25 immature salmon per set were caught. These catch levels justified reopening the commercial fishery (reopened the evening of July 19). Observations by ADF&G on July 20-23 indicated that the number of gilled salmon continued to decrease. Samples of immature salmon showed that an estimated 95% of the fish were sockeye salmon and the remainder were chinook and chum salmon. The estimated age of immature sockeye salmon was 90% age 2.2 and 2.1; on July 17 age 1.1 comprised 33% of the catch and on July 18 age 1.1 comprised 17% of the catch.

In 1969, an average of 17 purse seine vessels were involved in the Shumagin Islands Section fishery.

#### 1974 Season

In 1974, immature salmon in the Shumagin Islands Section were a concern from July 11-22. ADF&G was informed of immature salmon in the commercial catch on July 11 (B. De Jong, Alaska Department of Fish and Game, Sand Point, personal communication). One commercial fisherman reported a catch of over 1,000 immature sockeye salmon per vessel at Popof Head. The fisherman also noted that prior to July 11, catches of immature salmon were not significant. On July 11, seven purse seine permit holders were fishing the Popof Head area. On July 12, an ADF&G observer aboard a purse seine vessel reported that large numbers of immature salmon were in the Popof Head to Red Bluff area, both inshore and offshore; adult salmon catches were low, averaging about 50 per set. The Shumagin Islands Section was closed to commercial salmon fishing from July 12-15.

Test fishing on July 15 resulted in a catch of 73 immature salmon and 60 adult salmon. Observations by ADF&G were that most of the immature salmon were gilled in the first three fathoms of webbing below the cork line and in the ends of the net in the last 10 fathoms. Three sets were made during the test fishery; a total of 159 immature and 220 mature salmon were caught. The immature salmon were estimated to be 97% sockeye salmon.

Fishermen also reported immature salmon at Swedania Point, with a catch of 40 immature salmon in one set (estimated total catch of 500 for the day); two purse seine permit holders reported a few immature salmon at Fox Bay (estimated total catch of 100 for the day).

The Shumagin Islands Section reopened to commercial salmon fishing on July 16, and the catch of immature salmon decreased. During the evening of July 17, immature salmon again moved into the Popof Head area in abundance similar to the July 12 catches. The Shumagin Islands Section was again closed to commercial salmon fishing from July 18-21. The area was reopened on July 22 as a commercial test fishery, and about 100 to 200 immature salmon per set were observed. Fishermen reported that sets made near slack tide had caught immature salmon in significant numbers and an estimated 1,000 adult salmon per set. Fishermen reported that they had made no effort to pick the gilled immature salmon out of the seines, and sets after slack tide had produced a range of zero to 21 immature salmon per set with an average of eight per set.



From July 11-22, ADF&G estimated that 21,000 immature salmon were caught and due to the closures 35,000 escaped the fishery.

Observations on the 1979 Season

In 1979, large numbers of immature salmon were reportedly gilled in seine gear along the east side of Popof Island during June 25-26. On June 25, ADF&G had no personnel in the Sand Point area. On June 26, Tyler Gilmer, the Assistant Area Management Biologist, returned to Sand Point to assess the catch of immature salmon. The commercial fishery along the east shore of Popof Island was closed after June 26 due to excessive catches of immature salmon.

Following the closure of the east shore of Popof Island, most purse seine permit holders quit fishing the Shumagin Islands Section; however, four permit holders continued to fish the southeast shore of Unga Island. These fishermen caught substantial numbers of immature salmon on June 27. After June 27, the entire Shumagin Islands Section was closed to commercial salmon fishing.

The occurrence of immature salmon in the Shumagin Islands Section during June was not anticipated by ADF&G because in prior years immature salmon had not migrated into the area until July.

Due to vessel charter problems (vessels chartered by ADF&G had to be Coast Guard approved), ADF&G allowed short commercial fishing periods, monitored by ADF&G personnel, to determine the abundance of immature salmon in the fishery.

On July 4, a six hour opening was allowed, but a substantial number of immature salmon were caught and the fishery was not extended. On July 9, a second test fishery was allowed; immature salmon were not caught in substantial numbers and the fishery returned to normal periods. No other substantial numbers of immature salmon were observed by ADF&G or reported by fishermen during 1979.

After 1979, a regulation was passed allowing gill net fishermen to continue fishing in the Shumagin Islands Section when it became necessary to close the area to purse seine gear due to the presence of immature salmon.

#### 1989 Season

In late June of 1989, large numbers of immature sockeye salmon were reported in the Shumagin Islands Section. A Department of Public Safety vessel monitoring the July 6-7 commercial salmon fishing period noted 20 to 25 immature salmon harvested per set. On July 12, about 200 immature salmon per set were observed by ADF&G, resulting in a purse seine gear closure in the Shumagin Islands Section fishery 24 hours earlier than originally scheduled. Test fishing results indicated a high number of immature salmon present through July 22. Test fishing on July 23 indicated a decreasing trend in the catch of immature salmon. The Shumagin Islands Section was reopened to purse seine gear on July 25. On July 25, about 15 immature salmon per set were observed, and purse seine gear was allowed to continue fishing during open periods for the remainder of the commercial salmon season. During the purse seine gear closure, the Shumagin Islands Section was open to set gill net permit holders on July 13-14, and 20-21.

From 1975 to 1989 the species composition of the immature catch changed. Prior to 1975, about 90% of the immature salmon caught in the Shumagin Islands Section were sockeye salmon. After 1988, the immature catch was about 50% sockeye and 50% chum salmon.

The following two tables list data from immature sockeye salmon harvested in 1989:

Estimated age composition, in percent, of immature sockeye salmon catches from the Shumagin Islands Section, 1989.

Sample Size	Ages					Total
	1.1	1.2	2.1	2.2	3.1	
54	5.6	5.6	83.3	1.9	3.7	100.0

Estimated length (mm; mid eye to tail fork) by age of immature sockeye salmon catches from the Shumagin Islands Section, 1989.

	Ages					Total
	1.1	1.2	2.1	2.2	3.1	
Mean Length	357	420	362	430	393	368
SE	7	8	2	-	3	3
Range	350-370	405-430	320-400	430	390-395	320-430
Sample Size	3	3	44	1	2	53

#### 1990 Season

During the February 1990 Alaska Board of Fisheries meeting a discussion on the problem of immature salmon in the Shumagin Islands Section resulted in a policy statement by the Alaska Board of Fisheries (Department of Fish and Game policy on the incidental harvest of immature salmon in the South Peninsula area of the Alaska Peninsula/Aleutian Islands Area; ADF&G 1990). The policy gives ADF&G authority to close by emergency order areas of the South Peninsula when the incidental by-catch of immature salmon is considered excessive. ADF&G will consider average immature salmon caught per set, fleet distribution, and historical dates of occurrence. ADF&G will also utilize results from subsistence and commercial openings to evaluate the abundance of immature salmon and their possible presence in future openings. ADF&G was given the authority to open all areas in the South Peninsula to gill net gear during fishing periods when

the seine fishery is closed by emergency order due to the presence of immature salmon.

In early July of 1990, subsistence fishermen reported catches of immature salmon along the east shore of Popof Island. A test fishery was established with chartered purse seine permit holders making at least one-20 minute set at each test site (Popof Head, Middle Set, and Red Bluff; Figure 2). Additional sets were made if time permitted. To standardize the test fishery, ADF&G chartered only those vessels with full purse seine gear rather than half pursing the gear. The July 3 test fishery indicated that the average catch of immature salmon per set was two sockeye and six pink salmon (Table 1). Most immature salmon were gilled at mid-body and had to be removed by hand from the web. The July 5 test fishery resulted in an average immature catch of six sockeye, six pink, and nine chum salmon. The catch of immature salmon from the test fishery did not warrant closure of the area to purse seine gear and the fishing periods on July 6 and July 9-10 did not produce substantial numbers of immature salmon in the commercial catch. The next fishing period on July 13-14 resulted in an increased catch of immature chum salmon. The average weight of chum salmon in the catch from both the Shumagin Islands Section and the South Unimak area decreased substantially from the July 9-10 fishing period. In the Shumagin Islands Section, the average weight of chum salmon was 7.3 pounds on July 9 and decreased to 3.7 pounds on July 13.

The July 16 test fishery indicated that the average catch of immature salmon per set was 315 salmon. The July 17 test fishery resulted in an average immature salmon catch of 377 salmon per set. Based on these results the Shumagin Islands Section was closed to purse seine gear during the July 18-19 fishing period. The test fishery on July 20 resulted in an average immature salmon catch of 34 salmon per set. The July 21 test fishery resulted in an average immature salmon catch of 12 sockeye and 43 chum salmon. The results did not warrant continued closure of the Shumagin Islands Section to purse seine gear. On July 24, a fishing period for July 23-25 was announced. Observations by ADF&G on July 23 from five sets indicated that about 150 immature salmon per set were caught. These salmon were about 39% sockeye and 61% chum salmon. The Shumagin Islands Section were again closed to purse seine gear on July 23. The immature salmon were believed to have returned to the Shumagin Islands Section due to strong Southeast winds on July 22. A test fishery on July 25 indicated the average catch of immature salmon per set was six salmon. The Shumagin Islands reopened to purse seine gear on July 25 and no further purse seine closures were required to protect immature salmon. The Shumagin Island Section was closed to purse seine gear from July 15 until 5:00 AM, July 23 and from 10:30 PM, July 23 until 4:00 PM, July 25.

Large numbers of immature chum salmon were also reported in the commercial catch from the Otter Cove and Sanak Island Sections of the Unimak District on July 6. Based on reports from purse seine fishermen; these sections were closed to purse seine gear from July 6-31.

Closure of the Shumagin Islands Section affected about 40 to 50 purse seine permit holders, while the Otter Cove and Sanak Island Sections closure affected about 9 purse seine permit holders. About 50% of the fishermen affected by the closure stayed in port while the remainder fished other open areas. Additional effort in areas open to purse seine gear caused longer waiting lines at preferred fishing sites and smaller individual catches.

Table 1. Shumagin Islands Section July salmon test fish catch results, by set, date, and location, 1990-91.

Year/ Date	Set	Number of Adult Salmon						Immature Salmon					Percent	
		Chinook	Sockeye	Coho	Pink	Chum	Total	Chinook	Sockeye	Pink	Chum	Total	Sockeye	Chum
1990														
July 3	Popof Head	0	53	0	25	238	316	0	1	14	0	15	6.7	0.0
	Popof Head	0	45	0	16	117	178	0	3	7	0	10	30.0	0.0
	Popof Head	0	80	0	11	202	293	0	2	1	0	3	66.7	0.0
	Popof Head	0	68	0	7	115	190	0	2	0	0	2	100.0	0.0
	Average	0	62	0	15	168	244	0	2	6	0	8	26.7	0.0
July 5	Popof Head	0	49	0	31	318	398	0	13	14	17	44	29.5	38.6
	Popof Head	0	7	0	7	48	62	0	2	0	3	5	40.0	60.0
	Middle Set	0	20	0	12	114	146	0	3	4	7	14	21.4	50.0
	Average	0	25	0	17	160	202	0	6	6	9	21	28.6	42.9
July 16	Popof Head	0	206	273	160	321	960	8	222	16	61	307	72.3	19.9
	Cape Devine	0	88	117	68	138	411	6	198	1	117	322	61.5	36.3
	Average	0	147	195	114	230	686	7	210	9	89	315	65.8	28.3
July 17	Popof Head	6	97	206	303	387	999	11	261	0	346	618	42.2	56.0
	Red Bluff	2	32	68	101	129	332	7	94	2	155	258	36.4	60.1
	Middle Set	2	33	69	101	129	334	2	61	1	191	255	23.9	74.9
	Average	3	54	114	168	215	555	7	139	1	231	377	36.8	61.2
July 20	Popof Head	3	41	108	149	73	374	1	6	0	9	16	37.5	56.3
	Middle Set	2	24	65	90	44	225	1	14	0	15	30	46.7	50.0
	Red Bluff	4	57	151	209	102	523	2	39	0	16	57	68.4	28.1
	Red Bluff	2	41	108	149	73	373	0	14	0	19	33	42.4	57.6
	Average	3	41	108	149	73	374	1	18	0	15	34	53.7	43.4

-Continued-

Table 1. (page 2 of 5)

Year/ Date	Set	Number of Adult Salmon						Immature Salmon					Percent	
		Chinook	Sockeye	Coho	Pink	Chum	Total	Chinook	Sockeye	Pink	Chum	Total	Sockeye	Chum
July 21	Red Bluff	0	8	13	66	34	121	0	14	0	71	85	16.5	83.5
	Red Bluff	1	22	36	184	95	338	0	16	0	71	87	18.4	81.6
	Middle Set	0	13	22	112	58	205	0	7	0	0	7	100.0	0.0
	Popof Head	1	35	59	296	152	543	0	10	0	29	39	25.6	74.4
	Average	1	20	33	165	85	302	0	12	0	43	55	21.5	78.4
July 25	Popof Head	0	0	31	124	16	171	0	3	0	8	11	27.3	72.7
	Middle Set	0	0	56	79	11	146	0	2	0	3	5	40.0	60.0
	Cape Devine	0	0	59	194	30	283	0	0	0	0	0	0.0	0.0
	Average	0	0	49	132	19	200	0	2	0	4	5	31.3	68.8
August 13	Kelly's Rock	0	48	57	279	46	3	0	3	0	1	4	75.0	25.0
	Kelly's Rock	0	83	106	429	38	656	1	1	0	1	3	33.3	66.7
	Popof Head	0	18	21	279	31	349	0	2	0	1	3	66.7	33.3
	Red Bluff	0	7	41	188	20	256	0	2	0	1	3	66.7	33.3
	Cape Devine	0	3	34	186	7	230	0	1	0	3	4	25.0	75.0
	Elephant Rock	0	16	8	661	18	703	0	0	0	2	2	0.0	100.0
	Average	0	29	45	337	27	437	0	2	0	2	3	47.4	52.6
1991														
July 1	Popof Head							0	260	0	91	351	74.1	25.9
	Middle Set							0	230	0	57	287	80.1	19.9
	Red Bluff							4	236	0	53	293	80.5	18.1
	Average	3	797	2	559	260	1,620	1	242	0	67	310	78.0	21.6

-Continued-

Table 1. (page 3 of 5)

Year/ Date	Set	Number of Adult Salmon						Immature Salmon					Percent	
		Chinook	Sockeye	Coho	Pink	Chum	Total	Chinook	Sockeye	Pink	Chum	Total	Sockeye	Chum
July 2	Popof Head							0	399	0	127	526	75.9	24.1
	Middle Set							0	871	0	87	958	90.9	9.1
	Red Bluff							0	572	0	118	690	82.9	17.1
	Average	2	987	4	829	209	2,031	0	614	0	111	725	84.7	15.3
July 3	Popof Head							0	238	0	63	301	79.1	20.9
	Middle Set							1	678	0	2	681	99.6	0.3
	Red Bluff							0	823	0	90	913	90.1	9.9
	Average	17	451	6	994	326	1,794	0	580	0	52	632	91.8	8.2
July 4	Popof Head							0	552	0	37	589	93.7	6.3
	Middle Set							5	487	0	100	592	82.3	16.9
	Red Bluff							7	332	0	440	779	42.6	56.5
	Average	6	380	16	645	849	1,897	4	457	0	192	653	69.9	29.4
July 5	Popof Head							0	272	0	331	603	45.1	54.9
	Middle Set							2	392	0	125	519	75.5	24.1
	Red Bluff							2	56	0	66	124	45.2	53.2
	Average	6	112	20	495	405	1,038	1	240	0	174	415	57.8	41.9
July 6	Popof Head							2	861	0	751	1,614	53.3	46.5
	Middle Set							1	490	0	239	730	67.1	32.7
	Red Bluff							0	235	0	67	302	77.8	22.2
	Average	10	256	12	523	272	1,073	1	529	0	352	882	59.9	39.9
July 8	Popof Head							5	280	0	277	562	49.8	49.3
	Middle Set							3	222	0	132	357	62.2	37.0
	Red Bluff							3	155	0	191	349	44.4	54.7
	Average	14	75	38	44	287	457	4	219	0	200	423	51.8	47.3

-Continued-

Table 1. (page 4 of 5)

Year/ Date	Set	Number of Adult Salmon						Immature Salmon					Percent	
		Chinook	Sockeye	Coho	Pink	Chum	Total	Chinook	Sockeye	Pink	Chum	Total	Sockeye	Chum
July 9	Popof Head							5	314	0	248	567	55.4	43.7
	Middle Set							4	73	0	23	100	73.0	23.0
	Red Bluff							0	73	0	125	198	36.9	62.1
	Average	2	21	7	13	53	96	3	153	0	132	288	53.2	45.8
July 10	Popof Head							4	116	0	10	130	89.2	7.7
	Middle Set							4	42	0	5	51	82.4	9.8
	Red Bluff							3	79	0	192	274	28.8	70.1
	Average	3	36	49	36	42	166	4	79	0	69	152	52.1	45.5
July 11	Popof Head							9	311	0	13	333	93.4	3.9
	Middle Set							1	205	0	4	210	97.6	1.9
	Red Bluff							17	140	0	97	254	55.1	38.2
	Average	3	67	47	75	56	267	9	211	0	38	266	53.3	14.3
July 12	Popof Head							12	699	0	963	1,674	41.8	57.5
	Middle Set							8	169	0	47	224	75.4	21.0
	Red Bluff							10	70	0	50	130	53.8	36.5
	Average	5	63	53	118	119	357	10	313	0	353	676	46.3	52.3
July 13	Popof Head							20	210	0	281	511	41.1	55.0
	Middle Set							9	92	0	16	117	78.6	13.7
	Red Bluff							10	108	0	47	159	67.9	25.8
	Average	21	149	188	614	294	1,266	13	137	0	113	262	52.1	42.9
July 14	Popof Head							15	139	0	93	247	56.3	37.7
	Middle Set							15	335	0	100	450	74.4	22.2
	Red Bluff							20	454	0	336	810	56.0	41.5
	Average	17	212	117	1,201	245	1,792	17	309	0	176	502	61.6	35.1

-Continued-

Table 1. (page 5 of 5)

Year/ Date	Set	Number of Adult Salmon						Immature Salmon					Percent	
		Chinook	Sockeye	Coho	Pink	Chum	Total	Chinook	Sockeye	Pink	Chum	Total	Sockeye	Chum
July 16	Popof Head							28	33	0	253	314	10.5	80.6
	Middle Set							8	40	0	142	190	21.1	74.7
	Red Bluff							5	149	0	170	324	46.0	52.5
	Average	7	52	206	291	377	932	14	74	0	188	276	26.8	68.2
July 17	Popof Head							33	207	0	247	487	42.5	57.7
	Middle Set							7	136	0	105	248	54.8	42.3
	Red Bluff							12	185	0	226	423	43.7	53.4
	Average	8	40	82	233	143	506	17	176	0	193	386	45.6	49.9
July 18	Popof Head							8	77	0	73	158	48.7	49.2
	Middle Set							4	6	0	3	13	46.2	23.1
	Red Bluff							1	16	0	31	48	33.3	61.6
	Average	4	28	140	126	31	329	4	33	0	36	73	45.2	48.9
July 19	Popof Head							14	26	0	47	87	29.9	54.0
	Middle Set							11	4	0	13	28	14.3	46.4
	Red Bluff							3	18	0	12	33	54.5	36.4
	Average	20	45	435	281	124	905	9	16	0	24	49	22.4	46.6

In 1991, only immature salmon per set were counted, mature salmon were estimated.



## 1991 Season

In late June, subsistence fishermen reported immature salmon in waters along the east side of Popof Island. ADF&G chartered purse seine vessels from July 1-19 to determine the abundance of immature salmon. Test fish results from the Shumagin Islands were used as an indication of the presence of immature salmon in the South Central, Southwestern, and Unimak Districts of the Alaska Peninsula Management Area and the Western and Perryville Districts of the Chignik Management Area. Portions of the South Central, Southwestern, and the Unimak District and portions of the Western and Perryville Districts were, closed at times, to purse seine gear due to the presence of immature salmon. In 1991, the presence of immature salmon was wide spread, with reported catches from Kodiak Island to Unimak Island.

During commercial salmon periods in South Peninsula waters off July 6, July 8-9, July 10, and July 15-16, only gill net gear was allowed in the Shumagin Islands Section and the Unimak District. Test fishing on July 19 indicated that most immature salmon had migrated through the Shumagin Islands Section (average catch was 49 immature salmon). Purse seine fishermen were allowed to fish the section during the opening of July 21-23 (Table 1). On July 21, ADF&G personnel observed several commercial purse seine sets near Popof Island and reported that the number of immature salmon per set was less than five salmon.

Test fish results indicated that from July 1-6, most of the immature salmon caught were sockeye salmon, (59.9 to 91.8%). After July 6, the catch of immature sockeye and chum salmon was nearly equal.

The catch of immature salmon in the commercial salmon fishery for the rest of the salmon season was minor (probably averaging less than 1 immature salmon per set) and did not warrant further closures of South Peninsula waters to purse seine gear.

ADF&G observed that during the day, most of the immature salmon were caught in the upper 25 feet of the purse seine. All test sets were made close to shore, at some sites within 30 feet of the beach. During days of good visibility, immature salmon could be seen jumping off-shore at least one mile from the beach (M. Stopha, Alaska Department of Fish and Game, personal communication). Although no sets were made offshore to compare near-shore and off-shore sets, it is likely that substantial numbers of immature salmon would still be caught offshore.

During the 1991 purse seine closures, discussions between fishermen and ADF&G resulted in an agreement that fishermen (with ADF&G observers aboard) could experiment with net modifications during the 1992 season in an attempt to catch adult salmon while not restricting the migration of immature salmon. If a change in gear produced the desired results, purse seine gear regulations could be passed through the Alaska Board of Fisheries to allow modifications. One gear modification used in Puget Sound Washington uses four inch web in the upper strip of the purse seine to catch adult salmon while giving unrestricted passage to immature coho salmon. Board of Fish action during the November 1991 meeting closed most of the South Peninsula for all gear types from July 6-19. Although the closure was based on considerations other than immature salmon catches, the new regulation should solve most immature salmon problems; immature salmon

usually migrated out of the Shumagin Islands waters by July 23. With the closure in effect net modifications are not necessary.

The Shumagin Islands and Sanak Island Sections were closed to purse seine gear due to immature salmon from July 6 to until July 21. The Otter Cove Section and portions of the Volcano Bay and Ikatan Bay Sections were similarly closed from July 15 until July 21.

Closure of the Shumagin Islands Section impacted about 40 to 50 purse seine permit holders, while the Otter Cove and Sanak Island Sections impacted about 9 purse seine permit. In the Alaska Peninsula Management Area about 50% of the purse seine fishermen remained in port, and the remainder fished open areas.

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# ALASKA PENINSULA AREA

## CHAPTER 09.—ALASKA PENINSULA AREA

### ARTICLE 1.—DESCRIPTION OF AREA.

5 AAC 09.001. APPLICATION OF THIS CHAPTER. Requirements set forth in this chapter apply to commercial fishing only, unless otherwise specified. Subsistence fishing regulations affecting commercial fishing vessels or affecting any other commercial fishing activity are set forth in the subsistence fishing regulations in 5 AAC 01 and 5 AAC 02.

5 AAC 09.100. DESCRIPTION OF AREA. The Alaska Peninsula Area includes all waters of Alaska from Cape Menshikof to Cape Sarichef Light and from a line extending from Scotch Cap through the easternmost tip of Ugamak Island to a line extending 135° southeast from Kupreanof Point.

### ARTICLE 2. FISHING DISTRICTS AND SECTIONS.

5 AAC 09.200. FISHING DISTRICTS AND SECTIONS. (a) The Northern District includes all waters on the north (Bering Sea) side of the Alaska Peninsula between the westernmost tip of Cape Menshikof and the southernmost tip of Moffet Point:

(1) Cinder River Section: All waters of the Northern District east of 158°20' W. long.;

(2) Port Heiden Section:

(A) Outer Port Heiden Section: all waters of the Northern District located between 158°20' W. long. and the longitude of Strogonof Point (158°51' W. long.), exclusive of the Inner Port Heiden Section;

(B) Inner Port Heiden Section: all waters of Port Heiden Bay south and east of a line from Strogonof Point at 56°53'16" N. lat., 158°50'36" W. long. to the mainland shore of the northeast entrance to the bay at 56°56'31" N. lat., 158°40'44" W. long.;

(3) Ilnik Section: all waters between the longitude of Strogonof Point (158°51' W. long.) and the longitude of Three Hills (159°50' W. long.);

(4) Three Hills Section: all waters between the longitude of Three Hills (159°50' W. long.) and the longitude of Cape Seniavin Light (160°06' W. long.);

(5) Bear River Section: all waters between the longitude of Cape Seniavin Light (160°06' W. long. and the longitude of Wolf Point (160°48'30" W. long.), excluding the waters of the Herendeen-Moller Bay Section;

(6) Herendeen-Moller Bay Section: all waters south of a line extending from Entrance Point to Wolf Point to Point Edward on Cape Rozhnof;

(7) Nelson Lagoon Section: all waters of Nelson Lagoon inside the bars and inside a line extending from Lagoon Point to Wolf Point to Point Edward on Cape Rozhnof;

# ALASKA PENINSULA AREA

(8) Caribou Flats Section: all waters between Wolf Point and a point at 55°53'40" N. lat., 161°49' W. long., approximately 22 nautical miles west of Nelson Lagoon Village and exclusive of the waters comprising the Nelson Lagoon section;

(9) Black Hills Section: all waters between 55°53'40" N. lat., 161°49' W. long., and Moffet Point.

(b) The Northwestern District: all waters on the north (Bering Sea) side of the Alaska Peninsula between Moffet Point and Cape Sarichef Light on Unimak Island, including Bechevin Bay and the waters of Isanotski Strait north of a line from the False Pass cannery dock to Nichols Point.

(1) Izembek-Moffet Bay Section: all waters between Moffet Point and Cape Galazenap;

(2) Bechevin Bay Section: all waters between Cape Galazenap and Chunak Point, including Bechevin Bay and the waters of Isanotski Strait north of a line from the False Pass cannery dock to Nichols Point;

(3) Swanson Lagoon Section: all waters on the north side of Unimak Island between the easternmost edge of Chunak Point (55°02' N. lat., 163°27' W. long.) and east of the longitude of Otter Point (163°47' W. long.), excluding the waters of the Bechevin Bay Section;

(4) Uria Bay Section: all waters on the north side of Unimak Island west of the longitude of Otter Point (163°47' W. long.) and east of the northernmost tip of Cape Mordvinof (54°56' N. lat., 164°25'45" W. long.), including Peterson and Christianson Lagoons;

(5) Dublin Bay Section: all waters on the northwest side of Unimak Island east of the northernmost tip of Cape Mordvinof and west of Cape Sarichef Light (54°35'50" N. lat., 164°55'30" W. long.).

(c) The Unimak District includes all waters on the south side of Unimak Island between a line extending from Scotch Cap (54°24' N. lat., 164°47'36" W. long.) through the easternmost tip of Ugamak Island (54°12'42" N. lat., 164°45'48" W. long.), and a line extending 115° from Cape Pankof Light (54°39'36" N. lat., 163°03'36" W. long.), including the Sanak Islands;

(1) Cape Lutke Section: all waters of the Unimak District east of a line extending from Scotch Cap (54°24' N. lat., 164°47'36" W. long.) through the easternmost tip of Ugamak Island (54°12'42" N. lat., 164°45'48" W. long.), and west of the longitude of Rock Island (163°37'18" W. long.);

(2) Otter Cove Section: all waters of the Unimak District east of the longitude of Rock Island (163°37'18" W. long.) and north of 54°30' N. lat.;

(3) Sanak Island Section: all waters of the Unimak District east of the longitude of Rock Island (163°37'18" W. long.) and south of 54°30' N. lat..

## ALASKA PENINSULA AREA

(d) Southwestern District: all waters on the south side of the Alaska Peninsula north and east of a line extending 115° from Pankof Light (54°39'36" N. lat., 163°03'36" W. long.) and west of a line extending 106° from Arch Point Light (55°12'20" N. lat., 161°54'15" W. long.) to the western boundary of the Southeastern District (longitude of McGinty Point: 160°59' W. long.), including Inner Iliasik, Outer Iliasik, Goloi, Dolgoi, Poperechoi, and Deer Islands, all waters of Ikatan Bay, and all waters of Isanotski Strait south of a line from the False Pass cannery dock (54°51'30" N. lat., 163°24'30" W. long.) to Nichols Point (54°51'30" N. lat., 163°23'10" W. long.);

(1) Ikatan Bay Section: all waters of the Southwestern District located south and west of a line from Kenmore Head (54°57' N. lat., 163°01'40" W. long.) to Hague Rock (54°33'10" N. lat., 162°24' W. long.), and west of a line extending true south from Hague Rock;

(2) Morzhovoi Bay Section: all waters of Morzhovoi Bay north of a line from Kenmore Head to Cape Tachilni (54°55' N. lat., 162°52'30" W. long.);

(3) Thin Point Section: all waters of the Southwestern District east of Kenmore Head (54°57' N. lat., 163°01'40" W. long.) and west of Thin Point (54°57'30" N. lat., 162°33'30" W. long.), excluding waters of the Ikatan, Morzhovoi, and Cold Bay Sections;

(4) Cold Bay Section: all waters north of a line from Thin Point to Vodapoini Point;

(5) Deer Island Section: all waters within one nautical mile of Deer Island;

(6) Belkofski Bay Section: all waters between Vodapoini Point and Moss Cape, including Inner and Outer Iliasik Islands but excluding the waters of the Deer Island section;

(7) Volcano Bay Section: all waters between Moss Cape and Arch Point including Goloi, Dolgoi and Poperechnoi Islands;

(8) General Section: all other waters of the Southwestern district.

(c) South Central District: all waters on the south side of the Alaska Peninsula north and east of a line extending 106° from Arch Point Light (55°12'20" N. lat., 161°54'15" W. long.), and west of a line extending south from McGinty Point (55°27'30" N. lat., 160°59' W. long.), including Ukolnoi and Wosnesenski Islands;

(1) Pavlof Bay Section: all waters of Pavlof Bay, excluding the Canoe Bay section, and all other waters of the district west of the longitude of Cape Tolstoi (161°30' W. long.);

(2) Canoe Bay Section: all waters of Canoe Bay enclosed by a line from a point at 55°35'37" N. lat., 161°21'33" W. long. to a point at 55°35'41" N. lat., 161°21'40" W. long.;

(3) Mino Creek-Little Coal Bay Section: all waters of the district, excluding those of the Pavlof Bay and Canoe Bay sections, between the longitude of McGinty Point (160°59' W. long.) and the longitude of Cape Tolstoi (161°30' W. long.);

## ALASKA PENINSULA AREA

(f) Southeastern District: all waters on the south side of the Alaska Peninsula east of a line extending south from McGinty Point (55°27'30" N. lat., 160°59' W. long.), and west of a line extending 135° from Kupreanof Point (55°34' N. lat., 159°36' W. long.), including all of the Shumagin Islands;

(1) Beaver Bay Section: all waters of the Southeastern District east of the longitude of McGinty Point (160°59' W. long.), west of 160°49' W. long., and north of 55°26' N. lat.;

(2) Balboa Bay Section: all waters of the Southeastern District east of 160°49' W. long., north of 55°26' N. lat., and west of the longitude of Swedania Point (160°31'30" W. long.);

(3) Shumagin Islands Section: all waters of the Southeastern District east of the longitude of McGinty Point (160°59' W. long.), west of a line extending 135° from Kupreanof Point (55°34' N. lat., 159°36' W. long.), south of a line from 55°26' N. lat., 160°31'30" W. long., to 55°32'12" N. lat., 160°02'36" W. long. (approximately 1 nautical mile north of Karpa Island), and east to the Alaska Peninsula Area boundary (a line extending 135° from Kupreanof Point), excluding the Beaver Bay, Balboa Bay, and Southwest Stepovak Sections;

(4) Southwest Stepovak Section: all waters of the Southeastern District south of the latitude of 55°37'20" N. lat., west of 159°52' W. long., north of Shumagin Islands Section, and east of the Balboa Bay Section;

(5) Northwest Stepovak Section: all waters of the Southeastern District north of 55°37'20" N. lat. and west of the longitude of Dent Point (159°52' W. long.);

(6) Stepovak Flats Section: all waters of the Southeastern District north of 55°48'18" N. lat. and east of the longitude of Dent Point (159°52' W. long.);

(7) East Stepovak Section: all waters of the Southeastern District south of 55°48'18" N. lat., east of the longitude of Dent Point (159°52' W. long.), north of 55°32'12" N. lat., and west of a line extending 135° from Kupreanof Point (55°34' N. lat., 159°36' W. long.).

## ARTICLE 3.—SALMON FISHERY

**5 AAC 09.301. SEAWARD BOUNDARY OF DISTRICTS.** For the purpose of managing the historical salmon net fishery in the vicinity of False Pass and Unimak Bight, the outer boundary of the Southwestern and Unimak Districts is a line three miles seaward from a line commencing at 54°26'45" N. lat., 162°53' W. long., near the western end of Sanak Island to Cape Lutke on Unimak Island. The seaward boundary of all other districts is a line three miles seaward of the baseline described in 5 AAC 39.975(13).

**5 AAC 09.310. FISHING SEASONS.** (a) In the Northern District, salmon may be taken as follows:

(1) Cinder River Section

## ALASKA PENINSULA AREA

(A) from May 1 through September 30 within the lagoon into which Cinder River drains (locally known as False Ugashik or Shagong);

(B) from August 1 through September 30 throughout this section;

(2) Port Heiden Sections:

(A) Inner Port Heiden Section: from May 1 through September 30;

(B) Outer Port Heiden Section: from August 1 through September 30;

(3) Ilnik Section

(A) from May 1 through September 30 within Ilnik Lagoon and all waters inside the Seal Islands;

(B) for all waters west of Unangashak Bluffs at Loran line 9990-Y-33265 and the longitude of Three Hills (159°30' W. long.) from July 5 through July 15.

(C) from July 15 through September 30 throughout the remainder of this section.

(4) Three Hills Section: from June 25 through September 30;

(5) Bear River Section: from May 1 through September 30;

(5) Herendeen-Moller Bay Section: from May 1 through July 20 with the exception that within the bight enclosed by a line from Entrance Point to Harbor Point salmon may be taken from May 1 through September 30;

(7) Nelson Lagoon Section: from May 1 through September 30;

(8) Caribou Flats Section: no open season;

(9) Black Hills Section: from May 1 through September 30.

(b) In the Northwestern District, salmon may be taken only from June 1 through August 10, except that

(1) in the Dublin Bay Section, salmon may be taken only from July 10 through August 10;

(2) in the Bechevin Bay Section, salmon may be taken only from June 1 through September 30;

(3) after September 1, the salmon fishery season will be opened by emergency order.

(c) In the Unimak District, salmon may be taken only from June 1 through September 30.

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(d) In the Southwestern District, salmon may be taken only from June 1 through September 30.

(e) In the South Central District, salmon may be taken only from June 1 through September 30.

(f) In the Southeastern District, salmon may be taken only from June 1 through September 30.

**5 AAC 09.320. FISHING PERIODS.** (a) In the Northern District, salmon may be taken from 6:00 a.m. Monday until 6:00 p.m. Thursday, except as follows:

(1) in the Black Hills and Caribou Flats Sections, salmon may be taken from 6:00 a.m. Monday until 6:00 p.m. Friday;

(2) in the Nelson Lagoon Section, salmon may be taken

(A) during the period May 1 through June 15, from 6:00 a.m. Monday until 12:00 midnight Wednesday;

(B) during the period June 16 through August 15, from 6:00 a.m. Monday until 12:00 midnight Thursday;

(C) after August 15, from 6:00 a.m. Monday until 12:00 midnight Wednesday;

(3) in the Cinder River, Outer Port Heiden, Inner Port Heiden, and Ilnik Sections salmon may be taken from 6:00 a.m. Monday until 6:00 p.m. Wednesday.

(4) before July 1 in the Three Hills and Bear River Sections salmon may be taken from 6:00 a.m. Monday until 6:00 p.m. Wednesday.

(b) Salmon may be taken only during the open season in the Northwestern District in the

(1) Izembek-Moffet Bay Section: from 6:00 a.m. Monday until 6:00 p.m. Thursday;

(2) Bechevin Bay Section: only during fishing periods established by emergency order;

(3) Uria Bay Section: from 6:00 a.m. Monday until 6:00 p.m. Thursday.

(4) Dublin Bay Section, from 6:00 a.m. Monday until 6:00 p.m. Thursday.

(5) Swanson Lagoon Sections: from 6:00 a.m. Monday until 6:00 p.m. Thursday.

(c) Salmon may be taken during the open season in the Unimak District during fishing periods established by emergency order.

(d) Salmon may be taken only during the open season in the Southwestern District only during fishing periods established by emergency order.

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(e) Salmon may be taken only during the open season in the South Central District only during fishing periods established by emergency order.

(f) Salmon may be taken only during the open season in the Southeastern District only during fishing periods established by emergency order.

**5 AAC 09.330. GEAR.** (a) In the Northern District salmon may be taken:

- (1) in the Cinder River Section: with drift gill nets or set gill nets only;
  - (2) in the Inner and Outer Port Heiden Sections: with drift gill nets or set gill nets only;
  - (3) in the Ilhik Section: with drift gill nets or set gill nets only;
  - (4) in the Three Hills Section: with drift gill nets only;
  - (5) in the Bear River Section: with drift gill nets, purse seines and hand purse seines;
  - (6) in the Herendeen-Moller Bay Section: with drift gill nets, set gill nets, purse seines and hand purse seines;
  - (7) in the Nelson Lagoon Section: with drift gill nets or set gill nets;
  - (8) in the Caribou Flats Section: with drift gill nets or set gill nets;
  - (9) in the Black Hills Section: with drift gill nets or set gill nets only;
- (b) in the Northwestern District, salmon may be taken with drift gill nets, set gill nets, purse seines and hand purse seines.

(c) In the Unimak District, salmon may be taken with drift gill nets, set gill nets, purse seines and hand purse seines.

(1) salmon may be taken by gill net gear during periods when the seine fishery is closed by emergency order due to the presence of immature salmon.

(d) In the Southwestern District, salmon may be taken with purse seines, hand purse seines and set gill nets except that

(1) salmon may also be taken with drift gill nets west of a line from Kenmore Head to Hague Rocks to the easternmost tip of the Sanak Islands;

(2) salmon may be taken by gill net gear during periods when the seine fishery is closed by emergency order due to the presence of immature salmon.

(e) In the South Central District, salmon may be taken with set gill nets, purse seines and hand purse seines, except that

(2) within Canoe Bay, salmon may be taken only with purse seines and hand purse seines;

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(3) salmon may be taken by set gill net gear during periods when the seine fishery is closed by emergency order due to the presence of immature salmon.

(f) In the Southeastern District, salmon may be taken only with set gill nets, purse seines and hand purse seines except that

(1) salmon may be taken only with purse seines and hand purse seines in the area between Popof Head and Dark Cliffs (Popof Island) from June 1 through August 31; except that salmon may be taken by set gill net during periods when the seine fishery is closed by emergency order due to the presence of immature salmon.

(3) salmon may be taken only with set gill nets from June 1 through July 10 in the Beaver Bay, Balboa Bay, Southwest Stepovak, Northwest Stepovak, Stepovak Flats, and East Stepovak Sections;

(4) salmon may be taken by set gill net during periods when the seine fishery is closed by emergency order due to presence of immature salmon.

**5 AAC 09.331. GILL NET SPECIFICATIONS AND OPERATION.** (a) The size and operation of drift gill nets is as follows:

(1) the aggregate length of drift gill nets on a salmon fishing boat or in use by such boat shall be no more than 200 fathoms in length;

(2) the mesh size of drift gill nets shall not be less than five and one-quarter inches, except that in the Caribou Flats Section the mesh size of drift gill nets shall not be less than eight and one-half inches;

(3) in the Unimak and Southwestern Districts no drift gill net may exceed 90 meshes in depth, except no drift gill net used in the Nelson Lagoon Section may exceed 29 meshes in depth, prior to August 16 and 38 meshes in depth from August 16 through September 30.

(4) for the Northern and Northwestern Districts the maximum depth limit for drift gill nets shall be 70 meshes. Leadline weights on drift gill nets fishing in this area are restricted so that no more than 60 fathoms of a single (1) leadline will be allowed per 50 fathoms of corkline. No portion of this leadline may exceed 1.5 pounds per fathom.

(b) The size and operation of set gill nets is as follows:

(1) a set gill net may be no more than 100 fathoms in length; the aggregate length of set gill nets operated by a CFEC permit holder may be no more than 200 fathoms; no more than two gill net sites may be operated by a CFEC permit holder except that in the

(A) Inner Port Heiden Section a set gill net may be no more than 50 fathoms in length; the aggregate length of set gill nets operated by a CFEC permit holder may be no more than 100 fathoms; and no more than two gill net sites may be operated by a CFEC permit holder;

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(B) Inik Lagoon (portion of the Inik Section) a set gill net may be no more than 50 fathoms in length; the aggregate length of set gill nets operated by a CFEC permit holder may be no more than 150 fathoms; and no more than three gill net sites may be operated by a CFEC permit holder;

(C) In the Unimak, Southwestern, Southcentral and Southeastern Districts the maximum depth of set gill nets shall not be over 90 meshes.

(2) set gill nets shall be operated in substantially a straight line; no more than 30 fathoms of each set gill net may be used as a single hook;

(3) the mesh size of set gill nets shall not be less than five and one-quarter inches, except that in the Caribou Flats Section the mesh size of set gill nets shall not be less than eight and one-half inches;

(4) the maximum depth of set gill nets used in the Nelson Lagoon Section shall not be over 29 meshes;

(5) in the Unimak, Southwestern, South Central, and Southeastern Districts, 10 fathoms of seine webbing may be used on the shoreward end of a set gill net; the shoreward end of the seine webbing must be attached to the beach above low tide.

(6) During hours of darkness, each set gill net must be marked with at least one red light on the seaward end of the net, and at least one red light on both ends of the net if that net is more than 300 feet from shore.

**5 AAC 09.332. SEINE SPECIFICATIONS AND OPERATION.** (a) Purse seines and hand purse seines may not be less than 100 fathoms nor more than 250 fathoms in length. The maximum depth of a purse seine and hand purse seine may not exceed 375 meshes in depth. Seine mesh may not be more than 3½ inches except the first 25 meshes above the lead line may not be more than 7 inches.

(b) Leads may not be less than 50 fathoms nor more than 150 fathoms in length. Only one lead may be used with a seine. A lead may be attached to only one end of a seine, and the lead may not be attached to the boat end of the seine.

**5 AAC 09.334. IDENTIFICATION OF GEAR.** (a) Each drift gill net in operation must have at each end a bright red keg, buoy or cluster of floats plainly and legibly marked with the permanent vessel license plate (ADF&G) number of the vessel operating the gear as well as the initials of the operator.

(b) Each set gill net in operation must be identified as required by 5 AAC 39.280.

**5 AAC 09.335. MINIMUM DISTANCE BETWEEN UNITS OF GEAR.** No part of a set gill net may be set or operated within 900 feet of any part of another set gill net, except that in the

(1) Inner Port Heiden Section no part of a set gill net may be set or operated within 600 feet of any part of another set gill net;

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(2) Nelson Lagoon Section no part of a set gill net may be set or operated within 1,800 feet of any part of another operating set gill net.

**5 AAC 09.350. CLOSED WATERS.** Salmon may not be taken in the following locations:

(1) Meshik River: all waters upstream of a line crossing the river from a point at 56°47'04" N.lat., 158°41'06" W.long., to 56°47'58" N.lat., 158°38'45" W.long.; this is approximately one-half nautical mile upstream from the mean high tide mouth and approximately at the lower line of permanent grass growth;

(2) Sandy River

(A) May 1 through July 26; within 2,000 yards of the terminus of the river;

(B) July 27 through September 30: within 500 yards of the terminus of the river;

(3) Bear River

(A) May 1 through August 8: within 1,000 yards of the terminus of the river;

(B) August 9 through September 30: within 500 yards of the terminus of the river;

(4) Frank's Lagoon: all waters of the lagoon and within 500 yards outside the entrance;

(5) Bechevin Bay

(A) Saint Catherine Cove (Mike's Creek): all waters within 1,000 yards of the stream located at 55°00'48" N.lat., 163°31'33" W.long.;

(B) Trader's Cove: all waters north and east of a line from Morzhovoi Village (54°54'45" N.lat., 163°18'15" W.long.) to the base of Trader Mountain (55°00'05" N.lat., 163°18'22" W.long.);

(C) Warm Springs Bay: all waters southeast of a line from a point on the south shore of the bay at 54°56'28" N.lat., 163°15'45" W.long., to a point on the north shore of the bay at 54°57'16" N.lat., 163°15'33" W.long.;

(6) Christianson's Lagoon: all waters of the lagoon and its exit channel upstream from a point located 500 yards above the exit channel terminus at the ocean shoreline.

(7) Ikatan Bay: all waters within 1,000 yards of the stream at 54°45'15" N.lat., 163°15'15" W.long. on the north shore of the Ikatan Peninsula which exits from Swede's Lake;

(8) Morzhovoi Bay: all waters including Littlejohn Lagoon north and west of a line from the easternmost tip of Kenmore Head to Reynolds Head (55°9' N.lat., 162°57'51" W.long.) before July 7; beginning July 7:

(A) Middle Lagoon: all waters of the lagoon and within 1,000 yards of its entrance;



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(B) Littlejohn Lagoon: all waters of the lagoon and within 500 yards of its entrance at the narrows;

(9) Thin Point Cove and Lagoon: all waters north and west of a line from the tip of Thin Point westward to a point on the shore at 54°57'30" N.lat., 162°43'15" W.long.;

(10) Cold Bay

(A) Old Man Lagoon, Mortensen Lagoon and Nurse Lagoon: all waters of the lagoons and within 500 yards outside their entrances;

(B) Leonard Harbor: all water east of a line from a point on the south shore at 55°06' N.lat., 162°23' W.long., to a point on the north shore at 55°07' N.lat., 162°23' W.long., and within 1,000 yards of any salmon stream;

(C) Kinzarof Lagoon area: all waters north of a line from 55°13'25" N.lat., 162°43'25" W.long., to 55°16'10" N.lat., 162°34'25" W.long.;

(11) Deer Island

(A) all waters within 200 yards of the stream located at 54°55'41" N.lat., 162°14'12" W.long. and locally known as Eastern Creek.

(B) all waters within 200 yards of the stream located at 54°51'44" N.lat., 162°22'07" W.long. and locally known as Southern Creek;

(12) Belkofski Bay: all waters north and east of a line from 55°09'22" N.lat., 162°08'12" W.long., to 55°08'08" N.lat., 162°07'03" W.long., then to 55°07'20" N.lat., 162°07'39" W.long.;

(13) Volcano and Bear Bay

(A) all waters north of a line from 55°13'24" N.lat., 162°01'24" W.long., to 55°13'51" N.lat., 161°58' W.long.;

(B) all waters of Bear Bay west of 162° W.long. and locally known as Little Bear Bay;

(14) Longjohn Lagoon: all waters of the lagoon and within 500 yards outside its entrance;

(15) Pavlof Bay

(A) Chinaman Lagoon and Jackson Lagoon: all waters of the lagoons and within 1,000 yards outside their entrances;

(B) Dry Lagoon: all waters of the lagoon and within 500 yards of its entrance;

(C) Canoe Bay: all waters east of 161°14'12" W. long.;

(16) Balboa Bay

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(A) all waters north of a line extending west from Reef Point;

(B) all waters of Lefthand Bay west of a line from 55°31'36" N.lat., 160°42'54" W.long., to 55°33'12" N.lat., 160°42'06" W.long.;

(17) Zachary Bay: all waters of the inner bay south and west of a line extending from the inner edge of the grass line of the sand spit to the west of the tip of the prominent point of land approximately one and one-third nautical miles inside Quartz Point;

(18) San Diego Bay: all waters of a lagoon at the head of the bay and within 500 yards outside the lagoon's entrance except that from July 19 through August 31 the closure includes all waters west of a line from the reef at 55°33'08" N.lat., 160°26'30" W.long., to the headland at 55°34'02" N.lat., 160°25'48" W.long.;

(19) Dorenoi Bay

(A) through July 25, all waters north and west of a line from the tip of Renshaw Point to the opposite shore at 55°38'30" N. lat., 160°19' W. long.;

(B) after July 25, all waters within 500 yards of the terminus of any salmon stream;

(20) Chichagof Bay: all waters of the lagoon and within 500 yards of the lagoon entrance;

(21) Orzinski Bay (Orzenoi): within 1,000 yards of any salmon stream;

(22) Grub Gulch: all waters north and east of a line from 55°48'18" N.lat., 159°56'06" W.long. to 55°49'00" N.lat., 159°58'12" W.long.;

(23) Stepovak Bay: from June 1 through July 28, all waters within 500 yards of any salmon stream or lagoon unless otherwise specified; from July 29 through September 30, all waters north of a line extending east from the tip of Dent Point to a point on the Kupreanof Peninsula at 55°47' N.lat., 159°38'30" W.long.;

(24) Bay Point: all waters of the lagoon and within 500 yards of the lagoon entrance;

(25) Amak Island and adjacent Sea Lion Rocks: all waters within three nautical miles of these islands and elevations;

(27) Applegate Cove-Norma Bay: all waters south of a line from 55°14'08" N.lat., 162°53' W.long., to the southwest extremity of Norma Bay at 55°10'50" N.lat., 163°05'07" W.long.; this boundary aligns with the Cold Bay VORTAL cone and the headland located approximately two nautical miles south of the radar domes near Grant Point.

(28) Ilnik Lagoon: all waters of Ilnik Lagoon and Lake west of 159°30'12" W.long.;

(29) Herendeen Bay

(A) from May 1 through July 20, all waters within 500 yards of any salmon stream unless otherwise specified;

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(B) after July 20, all waters south of the latitude of Bold Bluff Point (55°45'15" N.lat.) and within 500 yards of all salmon streams north of 55°45'15" N.lat.

(30) Nelson Lagoon: all waters of the lagoon and river (called Caribou, Nelson, and Lagoon River) flowing into the upper (west) end of Nelson Lagoon, upstream of a line from 55°57'20" N.lat., 161°22'15" W.long. to 55°57'45" N.lat., 161°22'40" W.long.

(31) Caribou Flats: all waters of the Caribou Flats Section;

(32) Cape Menshikof: all waters of the Cinder River Section located north of Loran C line 9990-Y-32920;

(33) King Salmon River:

(A) from May 1 through July 15, all waters within 1000 yards of the stream terminus;

(B) after July 15, all waters within 500 yards of the stream terminus.

**5 AAC 09.355. SALMON PROCESSOR AND BUYER REPORTING REQUIREMENTS.** The operator of a floating salmon processing vessel or tender, or of a shorebased processing operation, and a company employing aircraft used for transporting salmon, shall report in person, or by radio or telephone, to a local representative of the department located in the management area of intended operation before the start of processing or buying operations. The report must include the location and the date of intended operation, and identify and describe each vessel or other method of transport employed in hauling or processing salmon.

**5 AAC 09.360. SOUTHEASTERN DISTRICT SALMON MANAGEMENT PLAN.** (a) This plan pertains to the management of the interception of Chignik River sockeye salmon caught in the East Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections. Before July 11, only set gillnet gear may be used in these sections. For the purpose of this plan, local runs include only those salmon in the waters inside of a line from Renshaw Point to the mouth of Osterback Creek.

(b) In years when a harvestable surplus for the first (Black Lake) and second (Chignik Lake) runs of Chignik River system sockeye salmon is expected to be less than 600,000, no commercial salmon fishery is allowed in the East Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections, as described in 5 AAC 09.200(f), until a harvest of 300,000 sockeye salmon in the Chignik Area, as described in 5 AAC 15.100, is achieved. After July 8, after at least 300,000 sockeye salmon have been harvested in the Chignik Area, and if escapement goals are being met, the department shall manage the fishery so that the number of sockeye salmon harvested in the Chignik Area will be at least 600,000 and the East Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections approaches as near as possible 6 percent of the total Chignik sockeye salmon catch.

(c) In years when a harvestable surplus beyond escapement goals for the first and second runs of Chignik River system sockeye salmon is expected to be more than 600,000, but the first run fails to develop as predicted and it is determined that a total sockeye salmon harvest in the Chignik Area of 600,000 or more may not be achieved, the commercial

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salmon fishery in the East Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections must be curtailed in order to allow at least a minimum harvest in the Chignik Area of 300,000 sockeye salmon by July 9 if that number of fish are determined to be surplus to the escapement goals of the Chignik River system. After July 8 and after at least 300,000 sockeye salmon have been harvested in the Chignik Area, and if escapement goals are being met, the department shall manage the fishery so that the number of sockeye salmon harvested in the Chignik Area is at least 600,000 and the East Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections approaches as near as possible 6 percent of the total Chignik sockeye salmon catch.

(d) In years when a harvestable surplus beyond the escapement goals for the first and second runs of Chignik River system sockeye salmon is expected to be more than 600,000 and the department determines that the runs are as strong as expected, the department shall manage the fishery so that the number of sockeye salmon taken in the East Stepovak, West Stepovak, Balboa Bay, and Beaver Bay Sections approaches as near as possible 6 percent of the total Chignik sockeye salmon catch.

(e) The estimate of sockeye salmon destined for the Chignik River has been determined to be 80 percent of the sockeye salmon harvested along the mainland from the easternmost tip of McGinty Point to Suzy Creek and from the Stepovak Flats and the East Stepovak Sections. The remaining sockeye salmon taken in the mainland fishery have been determined to be destined for Orzinski Bay.

(f) The total Chignik sockeye salmon catch constitutes those sockeye salmon caught within the Chignik Area, plus 80 percent of the sockeye salmon caught in the East Stepovak, Stepovak Flats, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections, as described in 5 AAC 09.200(f), plus 80 percent of the sockeye salmon caught in the Cape Igvak Section of the Kodiak Area. The percentage of Chignik sockeye salmon may be permitted to fluctuate above or below 6 percent at any time before July 25.

(g) This allocation method is in effect through July 25. The first fishing period of the commercial salmon fishing season in the East Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections may not occur before the first fishing period of the commercial salmon fishing season in the Chignik Area. After July 25, commercial salmon fishing in the East Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections may be allowed on local stocks.

(h) During the period from approximately June 26 to July 9, the strength of the second run of the Chignik River system sockeye salmon cannot be evaluated. In order to prevent overharvest of the second run, the department may disallow or severely restrict commercial salmon fishing in the East Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections during this period.

(i) The department shall announce commercial salmon fishing periods by emergency order. The department shall give at least one day's notice before the opening of a commercial salmon fishing period, unless it is an extension of a fishing period in progress.

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5 AAC 09.365. SOUTH UNIMAK AND SHUMAGIN ISLANDS JUNE SALMON MANAGEMENT PLAN. (a) Mixed stocks of salmon bound for distant systems have historically been intercepted in significant numbers along the Alaska Peninsula. To ensure that none of these runs are overharvested, it is necessary to restrain their interception.

(b) The Alaska Board of Fisheries has established sockeye guideline harvest levels on the South Unimak and Shumagin Islands interception fisheries during June, which are based on percentages of the latest projected Bristol Bay inshore sockeye harvest as published by the Department of Fish and Game. The South Unimak fishery takes place in the Unimak District and the Ikatan Bay and Bechevin Bay Sections, as described in 5 AAC 09.200(c),(d)(1) and (b)(2), of this chapter, plus the following waters of the Southwestern district outside of the Ikatan Bay Section and not included under 5 AAC 09.350.:

(1) all waters north and west of a line from Cape Pankof light to Thin point (54°57'26" N. lat., 162°33'121" W. long.).

(2) all waters enclosed by a line from Thin point (54°57'26" N. lat., 162°33'12" W. long.) to the northernmost tip of Stag Point (54°10' N. lat., 161°53'45" W. long.) on Deer Island to the southernmost tip of Dolgoi Cape (55°03'45" N. lat., 161°44' W. long.) on Dolgoi Island and from the northernmost tip of Bluff Point (55°10' N. lat., 161°53'45" W. long.) on Dolgoi Island to Arct. Point Light (55°12'20" N. lat., 161°58'15" W. long.) The Shumagin Islands fishery takes place in the Shumagin Islands Section, as described in 5 AAC 09.200(f)(3) of this chapter. Consistent with the board's Policy Statement on Management of Mixed Stock Salmon Fisheries and traditional harvest patterns, the maximum percentage allowed for the South Unimak fishery is 6.8 percent and for the Shumagin Islands fishery, 1.5 percent. The forecasts for Bristol Bay are sometimes updated as more information becomes available, just before the South Unimak and Shumagin Islands season, and exact numbers of fish cannot be given before the opening of each fishery.

(c) The sockeye guideline harvest levels are distributed proportionally over the June runs to avoid excessive impacts on any segment of the runs. The total allowable harvest in each area shall be harvested according to the following guideline ranges established for the following time periods:

Time Period.....	Guideline Harvest
June 13-18	35%
June 19-25	45%
June 26-30	20%
	100%

(d) Fishing periods will be announced by field emergency order, and will be adjusted to keep the harvest within the guidelines for each time period. If catches in either fishery fall below the guidelines in the first time period, those unharvested sockeye, up to a maximum of five percent of the total guideline harvest level for that fishery will be added to the total guideline harvest level for the second time period. If guideline harvest levels are inadvertently exceeded during any given fishing period, the excess will be a portion of the total guideline harvest level. If, during the last fishing period, the staff determines

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that no significant fishing occurred due to weather conditions, the staff may, at its discretion, permit fishing to continue after June 30.

(e) The South Unimak and Shumagin Island June salmon fishery targets on the more abundant and valuable sockeye salmon. The board recognizes that the harvest of other salmon species is incidental to the sockeye harvest. The board has determined that this incidental harvest is unavoidable and cannot be regulated with the present level of knowledge regarding this fishery. The board will not support any significant increase in the interception rate of chum salmon taken in the South Unimak and Shumagin Islands June salmon fishery. These stocks are probably fully utilized in existing terminal fisheries of long standing. This determination is consistent with the philosophy contained in the board's Policy Statement on Management of Mixed Stock Salmon Fisheries. The board recognizes that the conservation and allocation of non-targeted salmon stocks may be a concern during some years, but does not have the data to ensure specific corrective action at this time (January 1990).

(f) The department shall close the June fishery before the sockeye guideline harvest levels are taken if incidental harvest of chum salmon reaches 600,000 fish. The documented contribution of Russell Creek Hatchery chum salmon to the June fishery shall be added on over the existing chum salmon numerical quota beginning in 1993.

**DEPARTMENT OF FISH AND GAME POLICY ON THE INCIDENTAL HARVEST OF IMMATURE SALMON IN THE SOUTH PENINSULA AREA OF THE ALASKA PENINSULA/ALEUTIAN ISLANDS AREA.** Commercial purse seine fisheries occurring in the South Peninsula Area of the Alaska Peninsula Management Area, at sporadic times, incidentally harvest immature salmon while targeting on mature runs of salmon. The department believes that these immature salmon are of North American origin comprised of a wide variety of stocks which are presently fully utilized in existing fisheries. The department's intent is to minimize an excessive by-catch of immature salmon. Therefore, the department will close, by emergency order, areas of the South Peninsula when the incidental by-catch of immature salmon are considered excessive. In making this decision the department will consider average immatures per set, fleet distribution and historical dates of occurrence. The department will utilize results from subsistence and commercial openings in order to evaluate the abundance of immature salmon and their possible presence in future openings.

## ARTICLE 5.—SMELT FISHERY

5 AAC 09.510. FISHING SEASON. There is no closed season on smelt.

# ALEUTIAN ISLANDS AREA

## CHAPTER 12.—ALEUTIAN ISLANDS AREA

### ARTICLE 1.—DESCRIPTION OF AREA

5 AAC 12.091. APPLICATION OF THIS CHAPTER. Requirements set forth in this chapter apply to commercial fishing only, unless otherwise specified. Subsistence fishing regulations affecting commercial fishing vessels or affecting any other commercial fishing activity are set forth in the subsistence fishing regulations in 5 AAC 01 and 5 AAC 02.

5 AAC 12.100. DESCRIPTION OF AREA. The Aleutian Islands Area includes all waters of Alaska in the Aleutian Islands west of Cape Sarichef Light and west of a line extending from Scotch Cap through the easternmost tip of Ugamak Island.

### ARTICLE 2.—FISHING DISTRICTS AND SECTIONS

5 AAC 12.200. DESCRIPTION OF DISTRICTS AND SECTIONS. (a) Akutan District: all waters between Scotch Cap and Cape Sarichef Light and extending west to and including Akutan Pass. South of Scotch Cap Light, the eastern boundary of the district is a line extending from Scotch Cap through the easternmost tip of Ugamak Island.

(b) Unalaska District: all waters west of Akutan Pass to and including Umnak Pass;

(1) Beaver Inlet Section: all waters between Cape Sedanka and Cape Kalekta and including Unalga Island;

(2) Unalaska Bay Section: all waters between Cape Kalekta and Cape Kovrizhka;

(3) Makushin Bay Section: all waters between Cape Kovrizhka and Spray Cape;

(4) Kashega Bay Section: all waters between Spray Cape and Konets Head;

(5) Southern Section: all waters between Konets Head and Cape Sedanka.

(c) Umnak District: all waters west of Umnak Pass to and including Atka Pass.

(d) Adak District: all waters west of Atka Pass to the terminus of the Aleutian Islands.

### ARTICLE 3.—SALMON FISHERY

5 AAC 12.310. FISHING SEASONS. Salmon may be taken only from July 10 through September 30, except that in the Kashega Bay Section, salmon may be taken only from June 1 through September 30.

5 AAC 12.320. WEEKLY FISHING PERIODS. Salmon may be taken only as follows:

(1) June 1 through July 18, from 6:00 a.m. Monday until 6:00 p.m. Friday;

(2) from July 19 through September 30, salmon may be taken during open season only during fishing periods established by emergency order;

# ALEUTIAN ISLANDS AREA

5 AAC 12.330. GEAR. Salmon may be taken by purse seines, hand purse seines and beach seines.

5 AAC 12.332. SEINE SPECIFICATIONS AND OPERATION. (a) Purse seines and hand purse seines may not be less than 100 fathoms nor more than 250 fathoms in length.

(b) Beach seines may not be less than 100 fathoms in length and 3 fathoms in depth, nor more than 250 fathoms in length and 12 fathoms in depth.

(c) No lead may be less than 25 fathoms nor more than 150 fathoms in length.

5 AAC 12.350. CLOSED WATERS. The waters of Inner Iliulik Harbor and Margrets Bay between the Unalaska-Dutch Harbor bridge and 166-18-32' W. long. are closed to the taking of salmon.

5 AAC 12.355. SALMON PROCESSOR AND BUYER REPORTING REQUIREMENTS. The operator of a floating salmon processing vessel or tender, or a shorebased processing operation, and a company employing aircraft used for transporting salmon, shall report in person, or by radio or telephone, to a local representative of the department located in the management area of intended operation before the start of processing or buying operations. The report must include the location and the date of intended operation, and identify and describe each vessel or other method of transport employed in hauling or processing salmon.

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SALMON

EMERGENCY ORDER NO. 4-F-M-SP-11-91

EFFECTIVE DATE: 10:00 A.M. June 12, 1991

EXPLANATION: This emergency order allows a 10:00 A.M. Wednesday, June 12 until 10:00 P.M. Thursday, June 13 salmon fishing period in the Southeastern District Mainland fishery.

JUSTIFICATION: The Southeastern District Mainland fishery is managed on the basis of Chignik sockeye prior to July 26 as described under 5 AAC 09.360.

As of 2:00 P.M. June 10, the sockeye escapement in Chignik is about 60,000 salmon. An Alaska Department of Fish and Game test fishery in Chignik Lagoon harvested 3,160 sockeye salmon. As of 2:00 P.M. June 10, Chignik management staff announced a 24 hour salmon fishing period beginning 2:30 P.M. Tuesday, June 11 for the Eastern, Central, and Chignik Bay Districts. As of 2:00 P.M. June 10, Kodiak management staff announced a 48 hour salmon fishing period beginning 12:01 A.M. Wednesday, June 12 for the Cape Evak Section. Early indications of run strength for the 1991 early Chignik sockeye run shows that at this time there is a harvestable surplus of early run Chignik sockeye beyond escapement requirements. A 10:00 A.M. Wednesday, June 12, until 10:00 P.M. Thursday, June 13 fishing period in the Southeastern District Mainland area will give fishermen the opportunity to catch their allocation (6% of the total Chignik destined harvest prior to July 26).

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Emergency Order No. 4-F-M-CD-01-91

Effective Date: 6:00 P.M. June 12, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 6 hours until 12:00 P.M. June 12, in the Inner Port Heiden Section.

JUSTIFICATION: Weather prevented most of the Port Heiden fleet from fishing during Tuesday, and the scheduled closure will prevent effective fishing during Wednesday due to unfavorable tide conditions. Catches during Monday total approximately 550 Kings which is slightly above average for this date. A six hour extension of the fishery can be granted to make up for lost fishing time, without jeopardizing the resource.

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EMERGENCY ORDER NO. 4-F-M-SP-14-91

EFFECTIVE DATE: 10:00 P.M. June 13, 1991

EXPLANATION: This emergency order extends the present commercial salmon fishing period until 10:00 P.M. Saturday, June 15 in the Southeastern District Mainland fishery.

JUSTIFICATION: The Southeastern District Mainland fishery is managed on the basis of Chignik sockeye prior to July 26 as described under 5 AAC 09.360.

To date the sockeye harvest in Chignik is about 141,000 salmon and the sockeye escapement is about 131,000 salmon. The harvest of Chignik destined sockeye salmon in the Cape Igvak Section of the Kodiak Management Area is about 11,860 salmon. The harvest of Chignik destined sockeye salmon in the Southeastern District Mainland fishery on June 12 was 9,644 salmon.

Chignik announced a 24 hour extension for the Eastern, Central, and Chignik Lagoon Sections and Kodiak announced a 48 hour extension of the Cape Igvak Section fishery.

Currently, fishermen in the Southeastern District Mainland fishery have harvested about 5.9% of the total Chignik sockeye salmon catch.

A 48 hour extension of the present fishing period in the Southeastern District Mainland Area will give fishermen the opportunity to catch their 6% allocation.

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Emergency Order No.4-F-M-CD-02-91

Effective Date: 6:00 A.M. June 15, 1991

EXPLANATION: This emergency order allows a 6:00 A.M. until 1:00 P.M. commercial salmon fishing period during June 15 in the South Unimak fishery, and a 6:00 A.M. until 6:00 P.M. fishing period during June 15 in the Shumagin Islands fishery.

JUSTIFICATION: The June 12 - 18 sockeye allocations for the Shumagin Islands and South Unimak fisheries are 122,000 and 550,000 fish respectively. The total June sockeye allocation for the Shumagin Islands is 347,000 while the total South Unimak June allocation is 1,573,000 sockeye. A 600,000 chum salmon catch ceiling is placed over both fisheries combined. To date, test fishing results has indicated a high abundance of chum salmon. The chum percentage should decrease over the next several days, and should decrease in the Shumagin Islands before South Unimak. Short fishing periods during June 15 will allow the fishermen the opportunity to harvest sockeye without taking an excessive number of chums. If the sockeye per chum ratios during the fishery are acceptable, the fisheries can be extended. A longer fishing period in the Shumagin Islands is necessary to allow all seiners to make sets (at South Unimak, vessels don't have to wait turns).

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EMERGENCY ORDER NO.4-F-M-CB-03-91

EFFECTIVE DATE: 1:00 P.M. June 15, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 4 hours until 10:00 P.M. June 15 in the Shumagin Islands fishery, and 9 hours until 10:00 P.M. June 15 in the South Unimak fishery.

JUSTIFICATION: The June sockeye allocation for the Shumagin Islands and South Unimak fisheries are 347,000 and 1,573,000 respectively. However, there is a 600,000 chum salmon catch ceiling placed on both fisheries combined. Short fishing periods were announced for both fisheries during June 15 to safeguard against an excessive number of chums being taken. Verbal reports by fisherman

on the grounds indicates the chum catch is not excessive and that more time can be allowed to harvest sockeye during June 15.

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EMERGENCY ORDER NO.4-F-M-CB-04-91

EFFECTIVE DATE: 6:00 A.M. June 17, 1991

EXPLANATION: This emergency order establishes a 6:00 A.M. June 17 until 10:00 P.M. June 18 commercial salmon fishing period in the South Unimak and Shumagin Islands fisheries.

JUSTIFICATION: The guideline harvest levels during June 13 - 18 are 122,000 and 530,000 sockeye for the Shumagin Islands and South Unimak fisheries respectively. A 600,000 chum salmon ceiling is placed on both fisheries combined. To date 48,000 and 130,000 sockeye have been harvested in the Shumagin Islands and South Unimak fisheries respectively. The combined chum catch is 57,000. More fishing time is needed for the fisherman to harvest the June 13 -18 sockeye allocations, and the chum to sockeye ratio should be at its lowest point during the next several days. The first fishing period was delayed until June 15 because of large numbers of chums in the area earlier.

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EMERGENCY ORDER NO.4-F-M-CB-05-91

EFFECTIVE DATE: 12:00 P.M. June 17, 1991

EXPLANATION: This emergency order closes the commercial salmon fishing period in the Bear River section until further notice.

JUSTIFICATION: The 1991 Alaska Peninsula - Aleutian Islands Areas General Management Plan states that the sockeye escapement target past Bear River weir is 3,000 through June 15 and 10,000 through June 20. The escapement through June 16 was 3,000 with daily counts averaging less than 1,000 fish per day. At this rate, the June 20 goal will not be reached.

Fishing time in the Bear River Section should be closed until the weir counts justify more fishing time.

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EMERGENCY ORDER NO.4-F-M-CB-07-91

EFFECTIVE DATE: 12:00 P.M. June 17, 1991

EXPLANATION: This emergency order closes the commercial salmon fishing period in the Bear River section until further notice.

JUSTIFICATION: The 1991 Alaska Peninsula - Aleutian Islands Areas General Management Plan states that the sockeye escapement target past Bear River weir is 3,000 through June 15 and 10,000 through June 20. The escapement through June 16 was 3,000 with daily counts averaging less than 1,000 fish per day. At this rate, the June 20 goal will not be reached.

Fishing time in the Bear River Section should be closed until the weir counts justify more fishing time.

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EMERGENCY ORDER NO.4-F-M-CB-06-91

EFFECTIVE DATE: 10:00 P.M. June 18, 1991

EXPLANATION: This emergency order extends the commercial salmon fishing period 24 hours until 10:00 P.M. June 19 in the South Unimak fishery.

JUSTIFICATION: The June 13 - 18 sockeye guideline harvest level in the South Unimak fishery is 550,000 fish. To date only 186,000 sockeye have been harvested. More fishing time is needed for the fishermen to harvest their allocation.

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EMERGENCY ORDER NO.4-F-M-CB-08-91

EFFECTIVE DATE: 6:00 P.M. June 19, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 4 hours until 10:00 P.M. Wednesday during the week of June 16 - 22 in the Ilnik Section.

JUSTIFICATION: The minimum escapement through Ilnik weir is 6,600 sockeye which is over 25% of the minimum season escapement goal. Recent daily counts and commercial catches indicate the run size is rapidly increasing. Fishing will be ineffective during June 19 unless the fishing period is extended to include the evening tide. A 4 hour extension of fishing time can be allowed at this time without jeopardizing the resource.

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EMERGENCY ORDER NO.4-F-M-CB-09-91

EFFECTIVE DATE: 10:00 P.M. June 19, 1991

EXPLANATION: This emergency order extends the commercial salmon fishing time 24 hours until 10:00 P.M. June 20 in the South Unimak fishery and establishes a 6:00 A.M. until 10:00 P.M. fishing period during June 20 in the Shumagin Islands Section.

JUSTIFICATION: The guideline harvest levels during June 19-25 are 156,000 and 708,000 sockeye for the Shumagin Islands and South Unimak fisheries respectively. A 600,000 chum salmon ceiling is placed on both fisheries combined. To date, the combined chum catch is 169,000. Fishing time is needed for the fishermen to harvest the June 19 - 25 allocation and the chum to sockeye ratio should be at its lowest point.

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EMERGENCY ORDER NO. 4-F-M-SP-15-91

EFFECTIVE DATE: 6:00 A.M. June 20, 1991

EXPLANATION: This emergency order allows a 6:00 A.M. Thursday, June 20 until 10:00 P.M. Friday, June 21 salmon fishing period in the Southeastern District Mainland fishery.

JUSTIFICATION: The Southeastern District Mainland fishery is managed on the basis of Chignik sockeye prior to July 26 as described under 5 AAC 09.360.

As of 8:00 A.M. June 18, the sockeye escapement in Chignik is about 143,000 salmon. As of June 17 the commercial sockeye salmon catch in the Chignik Management Area is 440,921 salmon (66.9% of the total Chignik run). As of June 17 the Chignik bound commercial sockeye salmon catch in the Cape Igvak Section of the Kodiak Management Area is 162,966 salmon (24.7% of the total Chignik run). As of June 17 the Chignik bound commercial sockeye salmon catch in the Southeastern District Mainland fishery is 55,654 salmon (8.4% of the total Chignik run). Indications of run strength for the 1991 early Chignik sockeye stock shows that at this time the run is about as strong as expected in the preseason forecast. A 6:00 A.M. Thursday, June 20, until 10:00 P.M. Friday, June 21 fishing period in the Southeastern District Mainland area will give fishermen the opportunity to catch their allocation (6% of the total Chignik destined harvest prior to July 26).

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EMERGENCY ORDER NO.4-F-M-CB-10-91

EFFECTIVE DATE: 6:00 P.M. 20, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 24 hours in the Herendeen - Moller Bay Section until 6:00 P.M. June 21.

The entire Bear River Section is reopened to commercial salmon fishing from 10:00 P.M. June 20 until 6:00 P.M. June 21 and the weekly fishing periods listed in the regulation book are restored after June 21. This emergency order supersedes emergency order 4-F-M-CB-05.

JUSTIFICATION: The Bear River sockeye escapement past the weir as of 3:00 P.M. June 20 is 16,000 compared to a goal of 10,000 for this date. The closure in that portion of the Bear River Section south of Cape Kutuzof is no longer necessary and more fishing time is justified to harvest Bear River sockeye.

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EMERGENCY ORDER NO.4-F-M-CB-11-91

EFFECTIVE DATE: 6:00 A.M. June 22, 1991

EXPLANATION: This emergency order establishes a 6:00 A.M. until 10:00 P.M. commercial salmon fishing period in the Shumagin Islands Section during June 22. A 6:00 A.M. June 23 until 3:00 P.M. June 24 commercial salmon fishing period is established in the South Unimak fishery.

JUSTIFICATION: There are 92,000 sockeye left to be taken in the Shumagin Islands June 19 - 25 allocation and 448,000 sockeye remaining in the June 19 - 25 South

Unimak allocation. A 600,000 chum catch ceiling is placed on both fisheries combined. To date, the combined chum catch is 361,000.

The sockeye to chum ratio is much higher in the Shumagin Islands than at South Unimak. At this time it appears unlikely that the South Unimak fishery will come close to harvesting it's June sockeye allocation without hitting the chum ceiling unless the chum abundance drops sharply. The chum ceiling should not be surpassed in a 33 hour fishing period at South Unimak during June 22 - 23 and the fishing period can be extended if the chum catch is low.

A fishing period in the Shumagin Islands during June 22 should enable the fishermen to harvest a large segment of their remaining allocation while leaving time to take the remainder before the South Unimak fishery causes the chum catch ceiling to be reached. June 23 can be used as a catch tally day for the Shumagin fishery.

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EMERGENCY ORDER NO. 4-F-M-SP-16-91

EFFECTIVE DATE: 5:00 P.M. June 23, 1991

EXPLANATION: This emergency order changes the required 24 hour notice to a 3 hour notice prior to the next commercial salmon fishing period in the Southeastern District Mainland fishery: East Stepovak, Stepovak Flats, Northwest Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections.

JUSTIFICATION: The Southeastern District Mainland fishery is managed on the basis of Chignik sockeye prior to July 26 as described under 5 AAC 09.360.

As of Saturday, June 22, the sockeye escapement in Chignik is about 221,000 salmon. As of June 22 the commercial sockeye salmon catch in the Chignik Management Area is 591,793 salmon (61.6% of the total Chignik run). As of June 22 the Chignik bound commercial sockeye salmon catch in the Cape Igvak Section of the Kodiak Management Area is 269,486 salmon (28.0% of the total Chignik run). As of June 22 the Chignik bound commercial sockeye salmon catch in the Southeastern District Mainland fishery is 100,039 salmon (10.4% of the total Chignik run). Indications of run strength for the 1991 early Chignik sockeye stock shows that at this time the run is about as strong as expected in the preseason forecast.

The Chignik Management Area has a commercial salmon fishing period from 1:00 P.M. Sunday, June 23 until 1:00 P.M. Monday, June 24. If the harvest in the Chignik Management Area is as large as anticipated additional fishing time in the Southeastern District Mainland area will be necessary to allow Area M fishermen the opportunity to harvest the 6% allocation of Chignik destined sockeye as outlined in the Southeastern District Management Plan. Final catch results from the Chignik fishing period of June 23 through June 24 will not be available until the morning of June 25. A reduction in the required notice time before the opening of a commercial salmon fishing period in the Southeastern District Mainland area may make it possible to have a fishing period before the overlap period of June 26 to July 9 when the strength of the second run of the Chignik River system sockeye salmon cannot be evaluated.

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EMERGENCY ORDER NO.4-F-M-CB-12-91

EFFECTIVE DATE: 3:00 P.M. June 24, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 24 hours until 3:00 P.M. June 25 in the South Unimak fishery.

JUSTIFICATION: The South Unimak allowable sockeye harvest during June 19 - 25, after June 23 is 274,000 sockeye. There are 156,000 chums left to be caught before the combined South Unimak - Shumagin chum catch ceiling of 600,000 is reached. The South Unimak harvest during June 23 was 174,000 sockeye and 42,000 chum which was by far the highest sockeye to chum ratio of the season for this fishery.

More fishing time is needed to harvest the remaining sockeye allocation and it appears unlikely that the chum salmon ceiling will be reached during this fishing period.

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EMERGENCY ORDER NO. 4-F-M-SP-17-91

EFFECTIVE DATE: 6:00 A.M. June 25, 1991

EXPLANATION: This emergency order allows a 6:00 A.M. Tuesday, June 25 until 10:00 P.M. Tuesday, June 25 salmon fishing period in the Southeastern District Mainland fishery.

JUSTIFICATION: The Southeastern District Mainland fishery is managed on the basis of Chignik sockeye prior to July 26 as described under 5 AAC 09.360.

As of 12:01 A.M. June 23, the sockeye escapement in Chignik is about 283,100 salmon. Through June 23 the commercial sockeye salmon catch in the Chignik Management Area is about 729,000 salmon (66.4% of the total Chignik run). As of June 24 the Chignik bound commercial sockeye salmon catch in the Cape Igvak Section of the Kodiak Management Area is 269,486 salmon (24.5% of the total Chignik run). As of June 24 the Chignik bound commercial sockeye salmon catch in the Southeastern District Mainland fishery is 100,039 salmon (9.1% of the total Chignik run). Indications of run strength for the 1991 early Chignik sockeye stock shows that at this time the run is about as strong as expected in the preseason forecast.

The commercial salmon catch since June 23 in the Chignik Management Area should be larger; a strike by Chignik Area fishermen over sockeye salmon prices has substantially lowered the potential harvest.

The Alaska Department of Fish and Game will manage the Southeastern District Mainland fishery as if Chignik were fishing at their full potential.

A 6:00 A.M. Tuesday, June 25, until 10:00 P.M. Tuesday, June 25 fishing period in the Southeastern District Mainland area will give fishermen the opportunity to catch their allocation (6% of the total Chignik destined harvest prior to July 26).

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EMERGENCY ORDER NO.4-F-M-CB-13-91

EFFECTIVE DATE: 12:00 A.M., noon, June 25, 1991

EXPLANATION: This emergency order closes the South Unimak commercial salmon fishery at 12:00 A.M. noon June 25, three hours earlier than established by emergency order 4-F-M-CB-12-91.

JUSTIFICATION: There is a 600,000 chum salmon catch ceiling placed on the South Unimak and Shumagin Islands June fisheries combined. The South Unimak chum catch on June 23 was 42,000 (with a sockeye to chum ratio of 4.1 to 1) bringing the combined chum catch to 444,000. At this rate, there seemed to be no danger of the chum ceiling being reached during the extension of the fishing period through 3:00 P.M. June 25. Fishing time was needed to take the balance of the June 19 - 25 allowable sockeye catch. An unusually large number of chum salmon suddenly appeared during June 24, causing the day's catch to be 197,000 ( a sockeye to chum ratio of only 1.4 to 1). The combined June chum harvest is now 641,000 and the fishing period should be shortened to minimize the number of chums taken. It is doubtful if word will get to all of the fleet in time if the closure is prior to noon June 25.

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Emergency Order No. 4-F-M-CD-14-91

Effective Date: 6:00 P.M. June 26, 1991

Explanation: This emergency order:

- 1) Extends commercial salmon fishing time 24 hours until 12:00 P.M. June 27, in the Inner Port Heiden Section.
- 2) Extends commercial salmon fishing time 54 hours until 12:00 P.M. midnight June 28 in Ilnik Lagoon.
- 3) Extends commercial salmon fishing time 24 hours until 12:00 P.M. midnight June 28 in the Nelson Lagoon Section.

Justification: Port Heiden fishermen were unable to fish during Monday due to high winds. The effort dropped to only 5 units of gear as most of the fleet has moved to Bristol Bay. Additional fishing time can be granted at this time to make up for that lost to weather, without jeopardizing the resource.

The Ilnik sockeye escapement counted through the weir is nearing the lower end of the season escapement goal range and additional fish are believed to have gone through holes in the weir. More fishing time can be allowed to harvest the resource at this time.

Nelson Lagoon daily sockeye harvests are averaging 8,000 fish per day which is nearly twice the amount specified as a good catch in the management plan and is comparable to catches during the previous years which produced large runs. The escapement through the weir is 14,600 sockeye which is good for this date. More fishing time can be allowed at this time to harvest the resource.

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EMERGENCY ORDER NO.4-F-M-CB-15-91

EFFECTIVE DATE: 12:00 P.M. June 28, 1991

EXPLANATION: This emergency order allows continuous commercial salmon fishing time in Ilnik Lagoon during June 28 through July 31.

JUSTIFICATION: The sockeye escapement through Ilnik weir is 32,000 sockeye which is within the season escapement goal range of 25,000 to 50,000. Daily escapements are averaging over 7,000 fish and it is estimated that the upper end of the escapement goal range will soon be surpassed. More fishing time is needed to harvest the resource.

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EMERGENCY ORDER NO.4-F-M-CB-16-91

EFFECTIVE DATE: July 1, 1991

EXPLANATION: This emergency order closes the commercial salmon fishing season in that portion of the Bear River Section located between the south regulatory marker at King Salmon River and the north regulatory marker of Sandy River.

A 6:00 A.M. Monday until 6:00 P.M. Thursday fishing schedule is established for the Bechevin Bay Section, the same as the weekly fishing periods for the balance of the Northwestern District.

JUSTIFICATION: The Bear River sockeye escapement will be slightly less than the goal of 60,000 through June 30. Catches during the previous week indicated a strong run. Increasing the closure in the terminal area will allow fish to escape into the river while letting the fleet to harvest incoming fish.

Fishing time is needed to harvest Bechevin Bay Salmon. A 6:00 A.M. Monday until 6:00 P.M. Thursday weekly fishing schedule will make fishing periods the Bechevin Bay Section the same as in the balance of the Northwestern District.

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Emergency Order No. 4-F-M-CB-17-91

Effective Date: 6:00 P.M. July 3, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 48 hours until 6:00 P.M. July 5, in the Inner Port Heiden Section.

JUSTIFICATION: Effort in the Inner Port Heiden Section consists of less than four units of gear. Catches during July 3 averaged nearly 600 sockeye per delivery, indicating a strong run. More fishing time can be allowed at this time without endangering the resource.

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Emergency Order No. 4-F-M-CB-20-91

Effective Date: 6:00 P.M. July 4, 1991

EXPLANATION: This emergency order extends the present fishing period 24 hours in the Nelson Lagoon and Urilia Bay Sections.

JUSTIFICATION: Nelson Lagoon fishermen are on strike. The weir count of sockeye is 35,500, well below the goal target of 65,000 through July 5. However a substantial number of sockeye are in the river below the weir and a good sign of fish has been reported from the lagoon. A one day extension will give fishermen a chance to test the run if they settle their prices.

Fishermen at Urilia Bay were on strike until July 4. The Urilia Bay sockeye runs are strong and escapements look good for this date. An additional 24 hours can be allowed to allow fishermen to harvest more sockeye without endangering the resource.

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Emergency Order No. 4-F-M-CB-21-91

Effective Date: July 5, 1991

EXPLANATION: This emergency order allows commercial fishing to the terminus of Bear River at the ocean shoreline, effective July 5.

JUSTIFICATION: The early Bear River sockeye run escapement goal of 125,000 has been reached. More fishing area is needed to harvest the resource.

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Emergency Order No. 4-F-M-CB-22-91

Effective Date: 6:00 P.M. July 5, 1991

EXPLANATION: This emergency order allows continuous commercial salmon fishing time until 6:00 P.M. July 10 in the Inner Port Heiden Section.

The fishing period in the Nelson Lagoon Section is extended 24 hours until 12:00 P.M. midnight July 6.

JUSTIFICATION: Sockeye catches remain strong at Port Heiden, indicating a strong run, and effort is very light, consisting of less than four units of gear (averaging 600 sockeye each per day). Additional fishing time can be allowed without endangering the resource.

Nelson Lagoon fishermen are still on strike. Escapement counts are increasing through the weir and the count is estimated to come close to the July 5 target of 65,000 through the weir. A substantial number of sockeye are in the river below the weir and there are reports of large numbers of fish in the lagoon. More fishing time is needed to give the fishermen an opportunity to test the run strength when prices are settled.

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Emergency Order No. 4-F-M-CB-18-91

Effective Date: 5:00 A.M. July 6, 1991

EXPLANATION: This emergency order establishes a 5:00 A.M. until 10:00 P.M. commercial salmon fishing period during July 6 in the Shumagin Islands Section, South Central District, Southwestern District, Otter Cove Section, and Sanak Island Section. Fishing in the Shumagin Islands and Sanak Island Sections is limited to gill net gear only.

The closed waters of Cold Bay are expanded to include all of Cold Bay north of 55°10'N. lat.

JUSTIFICATION: Fishing time is needed to harvest South Peninsula chum salmon stocks and to test run strength. Test fishing has indicated large numbers of immature salmon present in the Shumagin Islands. Immature chum salmon were reported to be present during late June in the Sanak Island Section and large numbers of immature salmon have been caught there during previous seasons. It is anticipated that with seining closed in the Shumagin Islands, a tremendous number of immature chums could be killed in the Sanak Island Section, which would be a waste of a resource as local processors don't want immature salmon.

The closed waters in Cold Bay needs to be expanded to enable Russell Creek Hatchery to obtain adequate brood stock and to satisfy natural spawning requirements.

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EMERGENCY ORDER NO. 4-F-M-SP-21-91

EFFECTIVE DATE: 5:00 A.M. July 6, 1991

EXPLANATION: This emergency order allows a 5:00 A.M. Saturday, July 6 until 10:00 P.M. Saturday, July 6 salmon fishing period in the Northwest Stepovak Section of the Southeastern District Mainland area.

JUSTIFICATION: The Southeastern District Mainland fishery is managed on the basis of Chignik sockeye prior to July 26 as described under 5 AAC 09.360.

As of 8:00 P.M. July 4, the sockeye escapement into Orzinski Lake is about 9,500 salmon. The escapement for July 3 was 1,080 sockeye salmon and for July 4, through 8:00 P.M. was about 4,000 sockeye salmon. The escapement goal for Orzinski Lake through July 16 is 10,000 sockeye salmon. ADF&G observed several thousand sockeye salmon at the mouth of Orzinski River about noon today.

A 5:00 A.M. Saturday, July 6, until 10:00 P.M. Saturday, July 6 fishing period in the Northwest Stepovak Section of the Southeastern District Mainland area will give fishermen the opportunity to harvest salmon that are excess to escapement requirements. The Northwest Stepovak Section will be open concurrently with a set gill net only opening in the Shumagin Islands Section; effort is expected to be shared between the Shumagin Islands and the Northwest Stepovak Sections.

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Emergency Order No. 4-F-M-CB-19-91

Effective Date: 6:00 P.M. July 6, 1991

EXPLANATION: This emergency order reopens the commercial salmon fishing season in that portion of the Bear River Section located between King Salmon River and Sandy River.

Continuous commercial salmon fishing is allowed during the open season in the Herendeen-Moller Bay, Bear River, and Three Hills Sections and that portion of the Ilnik Section located outside of Ilnik Lagoon (continuous fishing time through July 31 has been established by previous emergency order for Ilnik Lagoon).

JUSTIFICATION: The escapements of sockeye into both Bear River and Ilnik systems are exceeding escapement goals due to the strength of the runs and a fishermen's strike. More fishing time and area is needed to harvest the resource once the fishermen decide to go fishing.

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Emergency Order No. 4-F-M-CB-23-91

Effective Date: 12:00 P.M., midnight, July 6, 1991

EXPLANATION: This emergency order extends continuous commercial salmon fishing time from July 6 through July 11 in the Nelson Lagoon Section.

JUSTIFICATION: Fishermen in Nelson Lagoon are still on strike and sockeye salmon are beginning to move through the Sapsuk River weir in large numbers. The daily count for July 5 was 19,000, bringing the season total to 66,000 which is at the target level for this date. Large numbers of fish are moving through the weir this morning and it's expected the season goal of 100,000 to 150,000 sockeye will soon be met. More fishing time is needed to harvest the resource.

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EMERGENCY ORDER NO. 4-F-M-SP-22-91

EFFECTIVE DATE: 5:00 A.M. July 8, 1991

EXPLANATION: This emergency order allows a 5:00 A.M. Monday, July 8 until 10:00 P.M. Monday, July 8 salmon fishing period in the Northwest Stepovak Section of the Southeastern District Mainland area. The closed waters at Orzinski River are reduced to 500 yards of the stream terminus effective 5:00 A.M. Monday, July 8.

JUSTIFICATION: The Southeastern District Mainland fishery is managed on the basis of Chignik sockeye prior to July 26 as described under 5 AAC 09.360.

As of 8:00 A.M. July 7, the sockeye escapement into Orzinski Lake is about 19,900 salmon. The escapement goal for Orzinski Lake through August 7 is 20,000 sockeye salmon. ADF&G observed a good showing of sockeye salmon at the mouth of Orzinski River last night.



A 5:00 A.M. Monday, July 8, until 10:00 P.M. Monday, July 8 fishing period in the Northwest Stepovak Section of the Southeastern District Mainland area will give fishermen the opportunity to harvest salmon that are excess to escapement requirements. The Northwest Stepovak Section will be open concurrently with a set gill net only opening in the Shumagin Islands Section; effort is expected to be shared between the Shumagin Islands and the Northwest Stepovak Sections.

Because the annual escapement objective for Orzinski River should be achieved by the evening of July 7 the closed waters area at the mouth of the Orzinski River has been reduced from 1,000 to 500 yards.

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Emergency Order No. 4-F-M-CB-24-91

Effective Date: 5:00 A.M. July 8, 1991

EXPLANATION: This emergency order establishes a 5:00 A.M. until 10:00 P.M. commercial salmon fishing period during July 8 in the Shumagin Islands Section, South Central District, Southwestern District, Otter Cove Section, and Sanak Island Section. Fishing in the Shumagin Islands and Sanak Island Sections is limited to gill net gear only.

JUSTIFICATION: Fishing time is needed to harvest South Peninsula chum salmon stocks and to test run strength. Test fishing has indicated large numbers of immature salmon are present in the Shumagin Islands. Immature chum salmon were reported to be present during late June in the Sanak Island Section and large numbers of immature salmon have been caught there during previous seasons. It is anticipated that with seining closed in the Sanak Island Section, which would be a waste of a resource as local processors don't want immature salmon.

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EMERGENCY ORDER NO. 4-F-M-SP-23-91

EFFECTIVE DATE: 10:30 A.M. July 8, 1991

EXPLANATION: This emergency order changes the required 24 hour notice to a 4 hour notice prior to the next commercial salmon fishing period in the Southeastern District Mainland fishery: East Stepovak, Stepovak Flats, Northwest Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections.

JUSTIFICATION: The Southeastern District Mainland fishery is managed on the basis of Chignik sockeye prior to July 26 as described under 5 AAC 09.360.

As of Sunday, July 7, the sockeye escapement in Chignik is about 700,100 salmon. As of July 6 the commercial sockeye salmon catch in the Chignik Management Area is 1,441,010 salmon (82.4% of the total Chignik run when excess escapement is added). As of July 6 the Chignik bound commercial sockeye salmon catch in the Cape Igvak Section of the Kodiak Management Area is 255,000 salmon (12.4% of the total Chignik run). As of July 6 the Chignik bound commercial sockeye salmon catch in the Southeastern District Mainland fishery is 116,843 salmon (5.5% of the total Chignik run). Indications of run strength for the 1991 late Chignik sockeye stock at this time are incomplete but are expected to be as strong as the preseason forecast.

ADF&G staff at Chignik are expected to assign salmon to the early or late run this afternoon. A change from the 24 hour to a 4 hour notice given prior to a salmon fishing period will allow fishermen the opportunity to harvest the 6% allocation of Chignik destined sockeye as outlined in the Southeastern District Management Plan.

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Emergency Order No. 4-F-M-CB-25-91

Effective Date: July 8, 1991

EXPLANATION: This emergency order extends continuous commercial salmon fishing time through August 1 in the Nelson Lagoon Section.

Effective July 8, the closed waters at Sandy River is reduced from 2,000 yards to include only those waters within 500 yards of the streams terminus.

JUSTIFICATION: The sockeye escapement through the Nelson River weir is in the season goal range of 100,000 to 150,000 and is expected to go much higher. More fishing time is needed to harvest the resource.

The Sandy River sockeye escapement is estimated to be at 32,000 which is over the season goal of 20,000 to 30,000. The sockeye run is mostly over but a large portion of the King Salmon run is at the mouth. A reduction of the 2,000 yard closure to 500 yards will open up more area for the fleet to harvest Bear River sockeye (the Bear River sockeye run is at it's peak with it's escapement goal greatly exceeded) while maintaining some protection for Sand River king salmon.

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EMERGENCY ORDER NO. 4-F-M-CB-26-91

EFFECTIVE DATE: 10:00 P.M. July 8, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 48 hours until 10:00 P.M. July 10 in the Shumagin Islands Section, South Central District, Southwestern District, Otter Cove Section, and Sanak Islands Section. Fishing in the Shumagin Islands and Sanak Island Sections is limited to gill net gear only.

JUSTIFICATION: Effort is light during the present fishing period due to a fisherman's strike and the strike is not anticipated to end soon. More fishing time can be allowed to allow the limited fishing effort an opportunity to harvest the resource.

EMERGENCY ORDER NO. 4-F-M-SP-25-91

EFFECTIVE DATE: 10:00 P.M. July 8, 1991

EXPLANATION: This emergency order extends the commercial salmon fishing period 48 hours, until 10:00 P.M. Wednesday, July 10 in the Northwest Stepovak Section of the Southeastern District Mainland area.

JUSTIFICATION: The Southeastern District Mainland fishery is managed on the basis of Chignik sockeye prior to July 26 as described under 5 AAC 09.360.

As of 9:00 A.M. July 8, the sockeye escapement into Orzinski Lake is 20,844 salmon. The escapement goal for Orzinski Lake through August 7 is 20,000 sockeye salmon. ADF&G observed a good showing of sockeye salmon at the mouth of Orzinski River and in the river yesterday.

A 48 hour extension, until 10:00 P.M. Wednesday, July 10 in the Northwest Stepovak Section of the Southeastern District Mainland area will give fishermen the opportunity to harvest salmon that are excess to escapement requirements. The Northwest Stepovak Section will be open concurrently with a set gill net only opening in the Shumagin Islands Section; effort is expected to be shared between the Shumagin Islands and the Northwest Stepovak Sections. Several set gill net fishermen are striking and effort is anticipated to be small.

The closed waters at Orzinski River were reduced to 500 yards of the stream terminus effective 5:00 A.M. Monday, July 8 and the escapement has slowed.

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EMERGENCY ORDER NO. 4-F-M-SP-24-91

EFFECTIVE DATE: 8:30 P.M. July 9, 1991

EXPLANATION: This emergency order allows a 8:30 P.M. Tuesday, July 9 until 10:00 P.M. Wednesday, July 10 salmon fishing period in the Southeastern District Mainland area: East Stepovak, Stepovak Flats, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections.

JUSTIFICATION: The Southeastern District Mainland fishery is managed on the basis of Chignik sockeye prior to July 26 as described under 5 AAC 09.360.

As of 12:01 A.M. July 9, the sockeye escapement in Chignik is about 701,754 salmon. Through July 7 the commercial sockeye salmon catch in the Chignik Management Area is about 1,497,611 salmon (about 82.9% of the total Chignik run when over-escapement due to a strike in Chignik is considered). As of July 7 the Chignik bound commercial sockeye salmon catch in the Cape Igvak Section of the Kodiak Management Area is about 255,000 salmon (11.8% of the total Chignik run). As of July 7 the Chignik bound commercial sockeye salmon catch in the Southeastern District Mainland fishery is 116,843 salmon (5.4% of the total Chignik run). Catches of sockeye salmon outside Chignik Lagoon are strong and indications of run strength for the 1991 late Chignik sockeye stock shows that at this time the run is about as strong as expected in the preseason forecast. The escapement of late run Chignik sockeye salmon as of 4:00 P.M. July 9 is about 48,800 salmon.

A 8:30 P.M. Tuesday, July 9, until 10:00 P.M. Wednesday, July 10 fishing period in the Southeastern District Mainland area will give fishermen the opportunity to catch their allocation (6% of the total Chignik destined harvest prior to July 26).

The Northwest Stepovak Section is currently open to commercial salmon fishing and is scheduled to close at 10:00 P.M. Wednesday, July 10 with the balance of the Southeastern District Mainland area.

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Emergency Order No. 4-F-M-CB-27-91

Effective Date: 6:00 P.M. July 10, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time until 6:00 P.M. July 17, in the Inner Port Heiden Section.

JUSTIFICATION: Commercial salmon fishing effort in the Inner Port Heiden Section consists of only one set net gillnetter who has to fly his fish to market.

A recent survey of the Meshik River indicated that a substantial number of salmon are likely present in the river although an accurate count couldn't be made due to murky water.

With such light effort, more fishing time can be allowed without jeopardizing the resource.

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EMERGENCY ORDER NO. 4-F-M-CB-28-91

EFFECTIVE DATE: 6:00 P.M. July 11, 1991

EXPLANATION: This emergency order extends the present fishing period 24 hours in the Urilia Bay Section.

JUSTIFICATION: Urilia Bay escapements are strong and sockeye catches continue to be very strong. Approximately 34,000 sockeye have been harvested so far this week which is exceptionally strong for this date. More fishing time can be allowed without endangering the resource.

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EMERGENCY ORDER NO. 4-F-M-SP-26-91

EFFECTIVE DATE: 3:30 P.M. July 14, 1991

EXPLANATION: This emergency order allows a 3:30 P.M. Sunday, July 14 until 10:00 P.M. Tuesday, July 16 salmon fishing period in the Northwest Stepovak Section of the Southeastern District Mainland area. The closed waters at Orzinski River are reduced to the stream terminus effective 3:30 P.M. Sunday, July 14.

JUSTIFICATION: The Southeastern District Mainland fishery is managed on the basis of Chignik sockeye prior to July 26 as described under 5 AAC 09.360.

As of 8:00 A.M. July 12, the sockeye escapement into Orzinski Lake is 28,188 salmon. The escapement goal for Orzinski Lake through August 7 is 20,000 sockeye salmon. The sockeye escapement on July 11 was 1,511 salmon.

A 3:30 P.M. Sunday, July 14, until 10:00 P.M. Tuesday, July 16 fishing period in the Northwest Stepovak Section of the Southeastern District Mainland area will give fishermen the opportunity to harvest salmon that are excess to escapement requirements.

Because the annual escapement objective for Orzinski River was achieved by the evening of July 7, the closed waters area at the mouth of the Orzinski River has been reduced to the stream terminus.

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EMERGENCY ORDER NO.4-F-M-CB-29-91

EFFECTIVE DATE: 5:00 A.M. July 15, 1991

EXPLANATION: This emergency order allows a 5:00 A.M. July 15 until 10:00 P.M. July 16 commercial salmon fishing period in the following locations:

Stepovak Flats Section  
Shumagin Islands Section  
South Central District  
Southwestern District  
Sanak Island Section  
Otter Cove Section

Fishing will be allowed by gill net gear only, in the following of the above locations or portions of the above locations due to the presence of immature salmon:

Shumagin Islands Section  
Sanak Island Section  
Otter Cove Section  
That portion of the Volcano Bay Section located within one nautical mile of Poperechnoi Island.  
That portion of the Ikatan Bay Section located South of 54 degrees 45 minutes N. lat.

JUSTIFICATION: Fishing Time is needed to harvest South Peninsula Chum salmon and to test run strength. Immature salmon are present in large numbers in the Shumagin Islands and were reported to be present in large numbers during the previous fishing period in the vicinity of Cape Pankof and at Poperechnoi Island. Immature salmon gill in seines and are not wanted by processors, resulting in wasted resource.

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EMERGENCY ORDER NO. 4-F-M-CB-30-91

EFFECTIVE DATE: July 15, 1991

EXPLANATION: This emergency order closes Peterson Lagoon, it's outlet channel, and all waters within 500 yards of the outlet channel terminus to commercial salmon fishing until September.

JUSTIFICATION: Many of the salmon inside Peterson Lagoon have been caught. The remaining sockeye are needed for escapement and it is estimated the chum escapement will fall short of escapement needs unless closed waters are greatly expanded.

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EMERGENCY ORDER NO.4-F-M-CB-31-91

EFFECTIVE DATE: 6:00 P.M. July 17, 1991

EXPLANATION: This emergency order extends continuous commercial salmon fishing time until 6:00 P.M. July 25 during the open season in the Herendeen - Moller Bay, Bear River, Three Hills, Ilnik, and Inner Port Heiden Sections. The season closes 12:00 P.M. July 20 in that portion of the Herendeen - Moller Bay Section not enclosed by a line from Entrance Point to Harbor Point.

JUSTIFICATION: The Bear River sockeye escapement is averaging well over 2,000 fish per day, the minimum number needed to reach the July 16 -August 5 escapement goal of 40,000 to 50,000 while allowing continuous fishing time up to the mouth of Bear River. The Ilnik sockeye escapement is over 123,000 as compared to the goal of 25,000 to 50,000. Indications are the Port Heiden sockeye escapement is good and effort consists of only one set gill net fisherman who has to fly his own fish out and hasn't been able to fish during the past two days due to weather. More fishing time is needed to harvest the resource.

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EMERGENCY ORDER NO.4-F-M-CB-32-91

EFFECTIVE DATE: 5:00 A.M. July 21, 1991

EXPLANATION: This emergency order allows a 5:00 A.M. July 21 until 10:00 P.M. July 23 commercial salmon fishing period in the following locations:

American and Orzinski Bays  
Shumagin Islands Section  
South Central District  
Southwestern District  
Sanak Island Section  
Otter Cove Section

JUSTIFICATION: Pink salmon are entering South Peninsula waters and fishing time is needed to harvest the resource. A season harvest of 3.5 million pink salmon is anticipated. Test fishing has indicated that immature salmon have decreased in abundance to the point where it's unlikely that seining will cause a serious wastage problem. The previous fishing period concentrated gear in the Northwest Stepovak section to the point where virtually all of the pinks and chums in the area were probably caught. Fishing time is needed in Orzinski and American Bays to harvest the Orzinski Lake sockeye run which is well over it's season escapement goal.

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EMERGENCY ORDER NO.4-F-M-CB-33-91

EFFECTIVE DATE: July 25, 1991

EXPLANATION: This emergency order extends continuous commercial salmon fishing time until 6:00 P.M. August 8 in that portion of the Northern District located between Harbor Point and Strogonof Point.

JUSTIFICATION: The Bear River sockeye escapement is over 57,000 sockeye for the July 16 - August 5 segment of the run, well past the goal of 40,000 to 50,000. More fishing time is needed to harvest the resource.

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EMERGENCY ORDER NO.4-F-M-CB-34-91

EFFECTIVE DATE: 5:00 A.M. July 27, 1991

EXPLANATION: This emergency order establishes a 5:00 A.M. July 27 until 10:00 P.M. July 28 commercial salmon fishing period in that portion of the south side of the Alaska Peninsula area located between Kupreanof Point and Rock Island (near Cape Lazaref), excluding the Stepovak Flats Section and that portion of the Northwest Stepovak Section located between Renshaw Point and the east entrance to West Cove.

JUSTIFICATION: Fishing time is needed to harvest South Peninsula pink salmon. Early escapement surveys and catch information from the end of the previous fishing period indicate that the run may be at the predicted 3.5 million harvest level or possibly higher. The Stepovak Flats chum run appears weak as does the Suzy Creek pink salmon run, therefore the Stepovak Flats Section and the western portion of the Northwest Stepovak Section will remain closed.

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EMERGENCY ORDER NO.4-F-M-CB-35-91

EFFECTIVE DATE: 5:00 A.M. July 27, 1991

EXPLANATION: This emergency order closes the commercial salmon fishing periods in the Swanson Lagoon and Bechevin Bay Sections until further notice. This emergency order supersedes 4-F-M-CB-16-91.

The closed waters at Southern creek on Deer Island are reduced to include only those waters upstream from the terminus at the ocean shoreline.

JUSTIFICATION: Only 600 sockeye were observed in Silver Salmon Creek at Swanson Lagoon, with no observations of fish in the lagoon. A complete closure is needed at this time to achieve the peak escapement goal of 6,000 to 12,000 sockeye. The St. Catherine Cove chum salmon escapement is estimated at less than 4,000 and it appears unlikely that the peak escapement goal of 6,500 will be reached at this time without a closure of the northern portion of the Bechevin Bay Section. The southern portion of the Bechevin Bay Section will reopen with future South Peninsula fishing periods.

The Southern creek pink salmon escapement is estimated at over 90,000 which is near the upper end of the 52,000 - 104,000 peak escapement goal range and it's still early in the run. More area is needed to harvest Southern Creek pink salmon.

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EMERGENCY ORDER NO.4-F-M-CB-36-91

EFFECTIVE DATE: 5:00 A.M. July 31, 1991

EXPLANATION: This emergency order establishes a 5:00 A.M. July 31 until 10:00 P.M. August 2 commercial salmon fishing period in all of South (Pacific) side of the Alaska Peninsula area located between Kupreanof Point and the longitude of Rock Island (near Cape Lazaref) except that portion of the Northwest Stepovak Section located between Renshaw Point and the east entrance to West Cove and the Stepovak Flats Section. That portion of the Bechevin Bay Section located south of the latitude of Rocky Point will also be open to commercial salmon fishing from 5:00 A.M. July 31 until 10:00 P.M. August 2.

The tip of Dent Point used as the western boundary of the closed waters at the head of Stepovak Bay is identified as the southern tip.

The closed waters are expanded back to 500 yards from the stream terminus in Orzinski Bay. Fishing had been allowed up to the stream terminus by emergency order 4-F-M-SP-26-91 which is superseded by this emergency order.

The closed waters at Mino creek and at Middle creek are reduced to include only those waters upstream from the terminus at the ocean shoreline.

JUSTIFICATION: Over 1.1 million pink salmon were harvested along the South Peninsula during July 27-28, indicating strong runs. Escapements in most early run systems are looking good for this date. Fishing time is needed to harvest the resource. The last survey of Suzy creek indicated that it's escapement was poor, therefore that portion of the Northwest Stepovak Section located between Renshaw Point and the east entrance to West Cove will remain closed to commercial salmon fishing.

Orzinski Bay is now being managed for pink salmon rather than sockeye. Therefore a closure near the stream mouth is necessary so that an adequate pink salmon escapement may be obtained.

The tip of Dent Point needed to be defined so that confusion over where the western edge of the Stepovak Bay closure could be eliminated.

The Middle Creek escapement is estimated at 44,000 pink salmon which is well within the peak escapement goal range of 36,000 to 72,000. The Mino creek pink salmon escapement is estimated to be 157,000 which is well within it's peak goal range of 112,000 to 224,000. More fishing area is needed to harvest Middle creek and Mino Creek pink salmon.

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EMERGENCY ORDER NO. 4-F-M-CB-37-91

EFFECTIVE DATE: August 1, 1991

EXPLANATION: This emergency order extends continuous commercial salmon fishing time an additional 24 hours through August 2 in the Nelson Lagoon Section.

JUSTIFICATION: Average daily catches in Nelson Lagoon are averaging 2,500 sockeye per day which is similar to the unusually high catch rate at this time



in 1990. Nelson Lagoon sockeye at this time of year are believed to be destined for the David's River Lakes which had an excellent escapement in 1990 despite extended fishing time in early August. One more day of fishing time can be allowed at this time without jeopardizing the resource.

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EMERGENCY ORDER NO. 4-F-M-CB-38-91

EFFECTIVE DATE: August 2, 1991

EXPLANATION: This emergency order reduces the closed waters at Eastern Creek on Deer Island to include only those waters upstream from the terminus at the ocean shoreline.

JUSTIFICATION: The Eastern Creek pink salmon escapement is estimated to be 20,700 which is well within the peak escapement goal range of 16,000 to 32,000. More fishing area is justified to harvest the resource.

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EMERGENCY ORDER NO. 4-F-M-CB-39-91

EFFECTIVE DATE: 5:00 A.M. August 5, 1991

EXPLANATION: This emergency order establishes a 5:00 A.M. August 5 until 10:00 P.M. August 7 commercial salmon fishing period in all of south (Pacific) side of the Alaska Peninsula area located between Kupreanof Point and the longitude of Rock Island (near Cape Lazaref) except that portion of the Northwest Stepovak Section located between Renshaw Point and the east entrance to West Cove and the Stepovak Flats Section. That portion of the Bechevin Bay Section located south of the latitude of Rocky Point will also be open to commercial salmon fishing from 5:00 A.M. August 5 until 10:00 P.M. August 7.

JUSTIFICATION: The South Peninsula pink salmon harvest during the previous week totaled 3.5 million fish which indicates that the run is one of the strongest on record. Chum salmon should be entering the southern portion of the Bechevin Bay Section. Fishing time is needed to harvest South Peninsula pink salmon and to test chum run strength in the southern portion of the Bechevin Bay Section.

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EMERGENCY ORDER NO. 4-F-M-CB-40-91

EFFECTIVE DATE: August 8, 1991

EXPLANATION: This emergency order extends continuous commercial salmon fishing time until 6:00 P.M. August 16 in that portion of the Northern District located between Harbor Point and Stroganof Point.

JUSTIFICATION: The Bear River sockeye escapement rates are averaging over 6,000 per day despite continuous commercial salmon fishing up to the river mouth. At this rate, the post August 5 escapement goal of 50,000 to 75,000 will be easily surpassed. More fishing time is needed to harvest Bear River sockeye.

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EMERGENCY ORDER NO. 4-F-M-CB-41-91

EFFECTIVE DATE: 5:00 A.M. August 10, 1991

EXPLANATION: This emergency order establishes a 5:00 A.M. August 10 until 10:00 P.M. August 12 commercial salmon fishing period in the East Stepovak Section, Shumagin Islands Section, that portion of the Bechevin Bay Section south of the latitude of Rocky Point, and that portion of the Alaska Peninsula area's south side located between the longitude of Swedania Point and Scotch Cap.

JUSTIFICATION: A total of 2.7 million pink salmon were harvested along the South Peninsula during the previous 3 day fishing period, indicating that the catch will likely be the second highest ever. However, pink salmon runs in the Southwest and Northwest Stepovak Sections appear weak. Chum salmon are now entering the southern portion of the Bechevin Bay Section, although there has been no reported fishing there to date. Fishing time is needed to harvest pink salmon along most of the South Peninsula and to test chum salmon run strength in the southern portion of the Bechevin Bay Section.

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EMERGENCY ORDER NO. 4-F-M-CB-42-91

EFFECTIVE DATE: August 11, 1991

EXPLANATION: This emergency order reduces closed waters to include only those waters upstream from the terminus at the ocean shoreline of Settlement Point Creek, all streams of the mainland portion of the Mino Creek - Little Coal Bay Section located west of 161 degrees west longitude, all streams on Deer Island, and Verskins Bight Creek, effective August 11, 1991 until August 31, 1991.

JUSTIFICATION: Pink salmon escapements are at optimum or above levels of all major streams on Deer Island, all major streams of the mainland portion of the Mino Creek - Little Coal Bay Section located between Cape Tolstoi and 161 degrees W. long, Settlement Point Creek, and the stream in Verskins Bight.

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EMERGENCY ORDER NO. 4-F-M-CB-43-91

EFFECTIVE DATE: 5:00 P.M. August 12, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 96 hours until 6:00 P.M. August 16 in the South Central District, Deer Island Section, and Thin Point Section.

The closed waters in Thin Point Cove are reduced to include only those waters within 1,000 yards of the Thin Point Lagoon terminus and to within 500 yards of the terminus of the other salmon stream emptying into Thin Point Cove.

JUSTIFICATION: Pink salmon escapement goals have been reached in most streams in the South Central District, Deer Island Section, and Thin Point Section. The Canoe Bay River Chum salmon escapement is estimated at 68,000 which is in the peak escapement goal range of 40,000 to 80,000. The Thin Point Lagoon sockeye escapement is estimated at 20,000 (some of the sockeye in the escapement will be used for subsistence). More fishing time is needed to harvest salmon in the

South Central District, Deer Island Section, and Thin Point Section. Fishing area is needed in Thin Point Cove to allow fishermen to harvest incoming sockeye, the regular closure prevents any commercial salmon fishing in the entire cove.

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EMERGENCY ORDER NO. 4-F-M-CB-45-91

EFFECTIVE DATE: 6:00 P.M. August 14, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 48 hours until 6:00 P.M. Friday during the week of August 11 - 17 in the Inner Port Heiden Section.

JUSTIFICATION: Effort at Port Heiden is light, consisting of only 6 drift gillnet boats and 3 set netters. The coho run is just beginning and the catch of 2,000 fish in two days is promising. Weather is preventing fishing during Wednesday and will likely not allow fishing on Thursday. A 48 hour extension should enable fishermen to make up time lost to weather. In the past, there has generally been no problem in obtaining good Port Heiden coho escapement while allowing fairly liberal fishing time.

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EMERGENCY ORDER NO. 4-F-M-CB-44-91

EFFECTIVE DATE: 12:00 A.M. noon, August 15, 1991

EXPLANATION: This emergency order:

1. Extends commercial salmon fishing time 24 hours until 10:00 P.M. August 17 in the South Central District, Deer Island Section and Thin Point Section.
2. Establishes a noon August 15 until 10:00 P.M. August 17 commercial salmon fishing period in the following locations:
  - A. That portion of the Bechevin Bay Section located south of the latitude of Rocky Point.
  - B. Cold Bay Section
  - C. Ikatan Bay Section
  - D. Belkofski Bay Section
  - E. Volcano Bay Section
  - F. Morzhovoi Bay Section
  - G. Unimak District
  - H. Beaver Bay Section
  - I. Balboa Bay Section
  - J. Shumagin Island Section
3. Reduces the closed waters at Bear Bay to include only those waters of the inner bay.
4. In the Shumagin Islands, closed waters are expanded to include all waters as follows:
  - A. All waters in Zachary Bay South of 55 degrees 21 minutes N. lat.
  - B. All waters of Squaw Harbor west of the longitude of the east end of the

Peter Pan Seafoods dock.

C. All Waters of Little Harbor west of 160 degrees 19 minutes 45 seconds W. long.

D. All waters of Delarof Harbor west of 160 degrees 10 minutes W. long.

E. All waters of Acheredin Bay north of 55 degrees 10 minutes N. lat.

JUSTIFICATION: The South Peninsula pink salmon run is the second largest on record, more fishing time is needed to harvest pink salmon in the South Central District, Deer Island Section, and Thin Point Section, where escapement needs have been met in most streams. Another fishing period is needed to allow fishermen to harvest pink and chum salmon in the Shumagin Islands Section, southern portion of the Bechevin Bay Section, and that portion of the South Peninsula presently not open west of Swendania Point. The chum salmon runs are late and only now are beginning to materialize in later areas. Stepovak Bay pink salmon runs are mediocre and no more fishing should be allowed there during August.

Pink salmon escapements are weak in Zachary Bay, Fox Hole, Squaw Harbor, Delarof Harbor and Acheredin Bay and expanded closures are needed to meet escapement requirements.

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EMERGENCY ORDER NO. 4-F-M-CB-46-91

EFFECTIVE DATE: 6:00 P.M. August 16, 1991

EXPLANATION: This emergency order extends continuous commercial salmon fishing time for another week until 6:00 P.M. Friday August 23 in the Bear River and Three Hills Sections and in that portion of the Herendeen - Moller Bay Section enclosed by a line from Entrance Point to Harbor Point. After 6:00 P.M. August 16, 6:00 A.M. Monday until 6:00 P.M. Friday weekly fishing periods are established in the Ilnik Section.

JUSTIFICATION: The late Bear River sockeye escapement goal will soon be reached even while allowing continuous fishing up to the mouth. More fishing time is needed to harvest the resource.

The Ilnik Section is now being managed for coho. Effort is very light, consisting of only 3 set gill netters and 4 - 5 drift gillnetters. The set gill net operations are well away from the entrance to the Unangashak River. There presently does not appear to be a need for the more restrictive fishing periods established in the regulation book due to fishing close to the river and a large number of Area T boats fishing the Ilnik Section (area T fishermen can no longer fish in the Ilnik Section outside of Ilnik Lagoon and none fish the lagoon). Coho escapement needs were exceeded in 1990 by a considerable margin, largely due to conservative fishing periods.

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EMERGENCY ORDER NO. 4-F-M-CB-47-91

EFFECTIVE DATE: 10:00 P.M. August 17, 1991

EXPLANATION: This emergency order extends commercial fishing time for salmon 24 hours until 10:00 P.M. August 18 in the following locations:

1. Shumagin Islands Section
2. Balboa Bay Section
3. Beaver Bay Section
4. South Central District
5. Southwestern District
6. Unimak District
7. That portion of the Bechevin Bay Section south of the latitude of Rocky Point.

JUSTIFICATION: Pink salmon escapements are generally good for this date and catches of chum salmon are good. Pink salmon catches along the capes in the Shumagin Islands are averaging about 3,000 fish per boat which is good for this late date. A 24 hour extension of this fishery can be allowed at this time without jeopardizing the resource.

-----

EMERGENCY ORDER NO. 4-F-M-CB-48-91

EFFECTIVE DATE: August 18, 1991

EXPLANATION: This emergency order:

1. Reduces the closed waters at the southernmost stream in Dolgoi Harbor to include only those waters upstream from the terminus to the ocean shoreline, effective August 18, through August 31.
2. From 12:00 A.M. noon until 10:00 P.M. during August 18, the closed waters of Cold Bay north of 55 degrees 10 minutes N.lat. are reduced to include only those waters:
  1. Enclosed by a line from the east end of the Cold Bay dock to the northern tip of Delta Point.
  2. All waters within 500 yards of Trout Creek.
  3. All waters of Kinzarof Lagoon.

JUSTIFICATION: The pink salmon escapement into the main stream in Dolgoi Harbor is estimated to be 6,100 which is near the upper end of the 3,200 to 6,400 peak escapement goal range.

It is estimated that more than enough chum salmon are in the upper end of Cold Bay than is needed to satisfy escapement and hatchery needs in Russell Creek. A fishery in part of the bay is needed to harvest the surplus chums.

-----

EMERGENCY ORDER NO. 4-F-M-CB-49-1991

EFFECTIVE DATE: 10:00 P.M. August 17, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 48 hours until 10:00 P.M. August 20 in the Deer Island and Thin Point Sections and in that portion of the South Central District located east of 161 degrees 33 minutes W. long.

JUSTIFICATION: Pink Salmon escapements goals have been achieved in most pink salmon streams in the eastern portion of the South Central District, Deer Island Section, and Thin Point Section. The Thin Point sockeye escapement is within the goal range. The Sandy Cove chum salmon escapement of 9,000 is good for this date. More fishing time is justified to harvest the surplus in the above areas. More fish are needed for escapement in streams throughout the balance of the South Peninsula and Bechevin Bay.

-----

EMERGENCY ORDER NO. 4-F-M-CB-50-91

EFFECTIVE DATE: August 21, 1991

EXPLANATION: This emergency order extends continuous commercial salmon fishing time for the balance of the 1991 season in the Bear River and Three Hills Sections and in that portion of the Herendeen - Moller Bay Section enclosed by a line from Entrance Point to Harbor Point.

JUSTIFICATION: The Post August 5 Bear River sockeye escapement is over 52,000 which is above the minimum season goal of 50,000. Daily escapements continue at a high rate despite continuous fishing. More continuous fishing time is needed to harvest the resource.

-----

EMERGENCY ORDER NO. 4-F-M-CB-51-91

EFFECTIVE DATE: 6:00 P.M. August 21, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 24 hours until 6:00 P.M. Thursday during the week of August 18 -24 in the Inner Port Heiden Section.

JUSTIFICATION: The Port Heiden coho salmon catches are averaging approximately 3,000 fish per day which indicates a strong run. Effort remains at a moderate level. In the past more than adequate escapements were achieved under these circumstances. A 24 hour extension of the fishery will allow for a better harvest and should not jeopardize the resource.

-----

EMERGENCY ORDER NO. 4-F-M-CB-52-91

EFFECTIVE DATE: 6:00 P.M. August 28, 1991

EXPLANATION: This emergency order extends commercial salmon fishing time 48 hours until 6:00 P.M. Friday during the week of August 25 -31 in the Inner Port Heiden Section.

JUSTIFICATION: Only 5 boats were able to fish in the Inner Port Heiden Section during Monday and Tuesday due to high north west winds. Catches averaged nearly 400 coho per boat which is very good for Port Heiden. More fishing time can be allowed to make up for that lost to weather without jeopardizing the resource. In the past Port Heiden coho escapements have been very good under similar circumstances.

-----

EMERGENCY ORDER NO. 4-F-M-SP-31-91

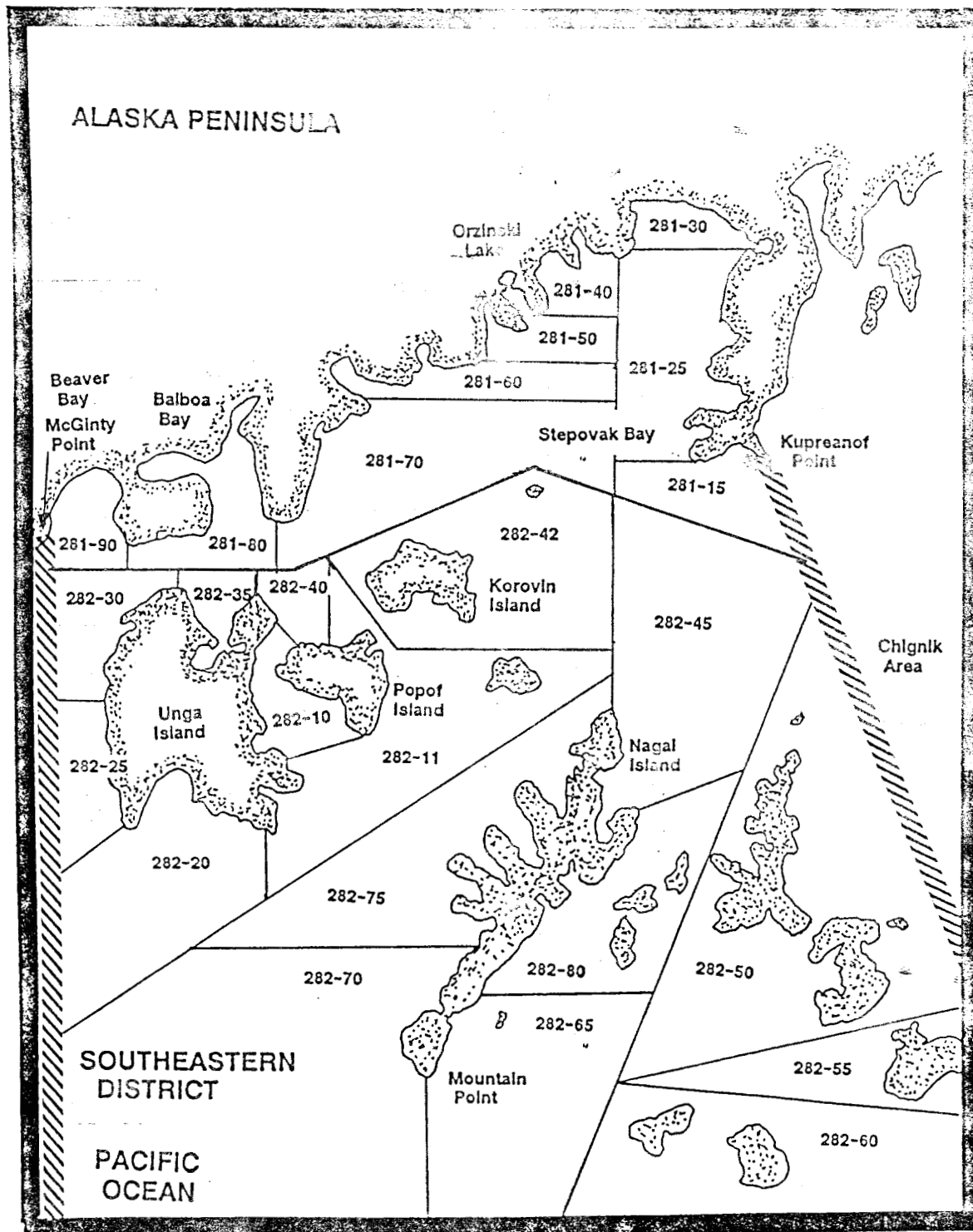
EFFECTIVE DATE: 8:00 A.M. September 1, 1991

EXPLANATION: This emergency order allows a 8:00 A.M. Sunday, September 1 until 9:00 P.M. Tuesday, September 3 salmon fishing period in the following management units:

- A. Shumagin Islands Section
- B. Beaver Bay Section
- C. Balboa Bay Section
- D. Southwest Stepovak Section
- E. Northwest Stepovak Section
- F. East Stepovak Section

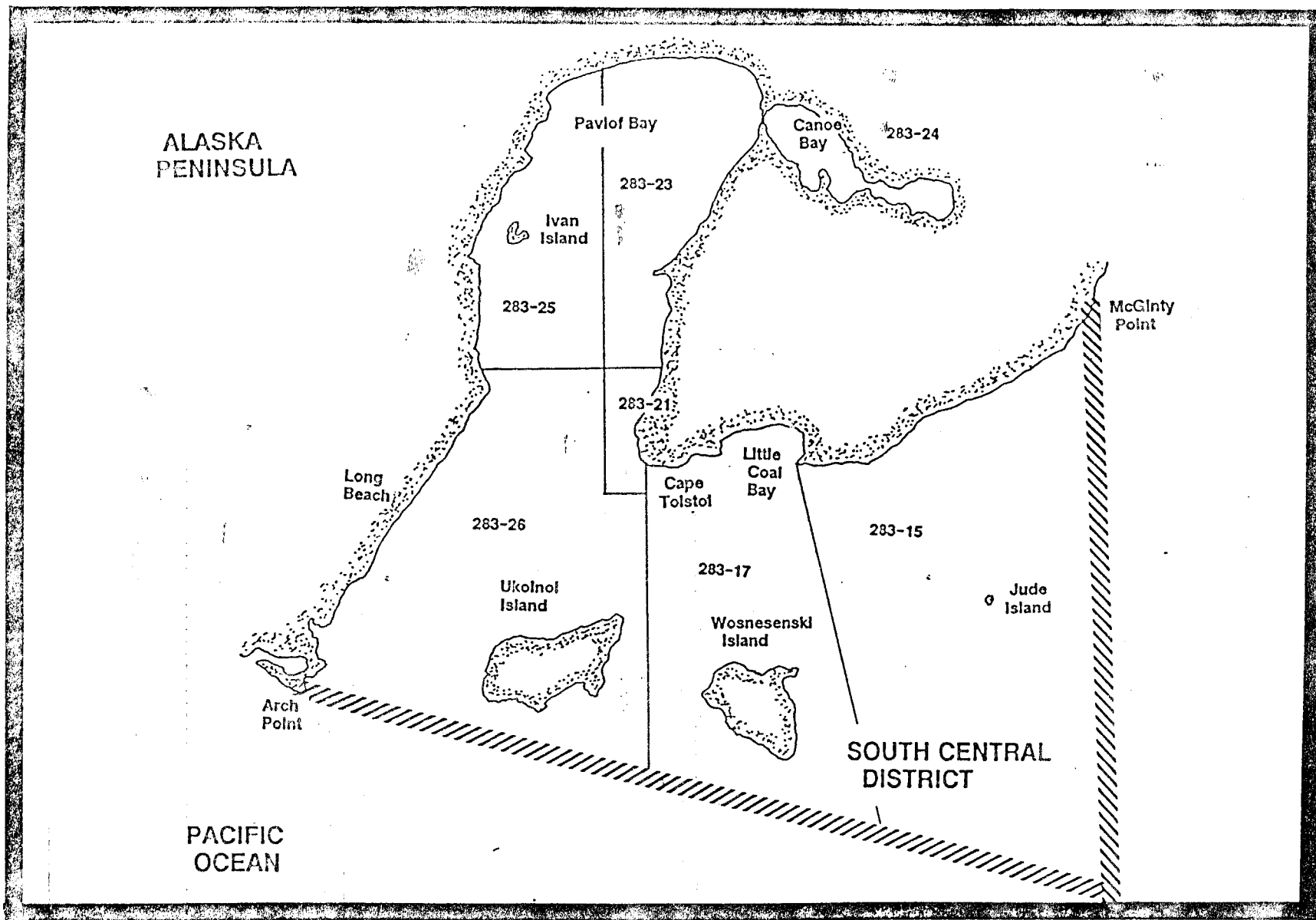
Closed waters are expanded to include all waters as follows:

- A. Zachary Bay: all waters in Zachary Bay South of 55 21' N. lat.
- B. Squaw Harbor (Baralof Bay): all waters in Squaw Harbor West of the longitude of the East end of the Peter Pan Seafoods dock.
- C. Delarof Harbor: all waters in Delarof Harbor West of 160 30' W. long.
- D. Acheredin Bay: all waters in Acheredin Bay North of 55 10' N. lat.
- E. Fox Hole (Little Harbor): all waters in Fox Hole West of 160 19'45" W. long.
- F. Dorenoi Bay: all waters in Dorenoi Bay West of a line extending from the North shore of Dorenoi Bay at 55 39'12" N. lat., 160 23'06" W. long. to a point on the South shore of Dorenoi Bay at 55 37'54" N. lat., 160 24'36" W. long.
- G. Chichagof Bay: all waters in Chichagof Bay North of a line extending from the Eastern shore of Chichagof Bay at 55 39'36" N. lat., 160 13'30" W. long. to a point on the Western shore of Chichagof Bay at 55 38'56" N. lat., 160 15' W. long.
- H. Orzinski Bay: all waters of Orzinski Bay within 1,000 yards of any salmon stream.
- I. Clark Bay: all waters of Clark Bay North of a line extending from the Eastern shore of Clark Bay at 55 47' N. lat., 160 58'45" W. long. to a point on the Western shore of Clark Bay at 55 45' N. lat., 160 01'30" W. long.
- J. Grub Gulch: all waters of Grub Gulch North of 55 48' N. lat.
- K. Island Bay: all waters of Island Bay East of 159 38'12" W. long.



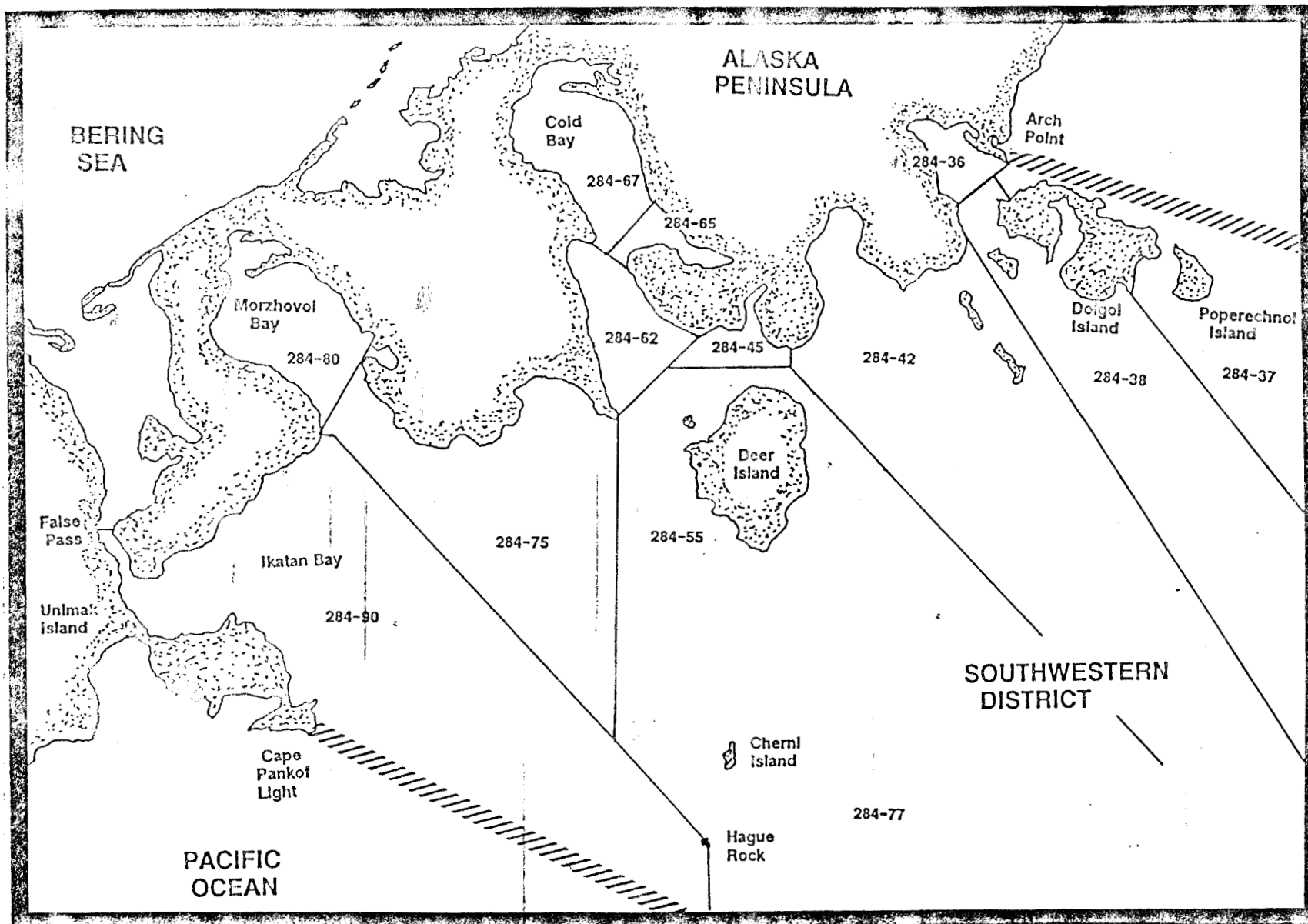
Southeastern District Salmon Statistical Harvest Areas.



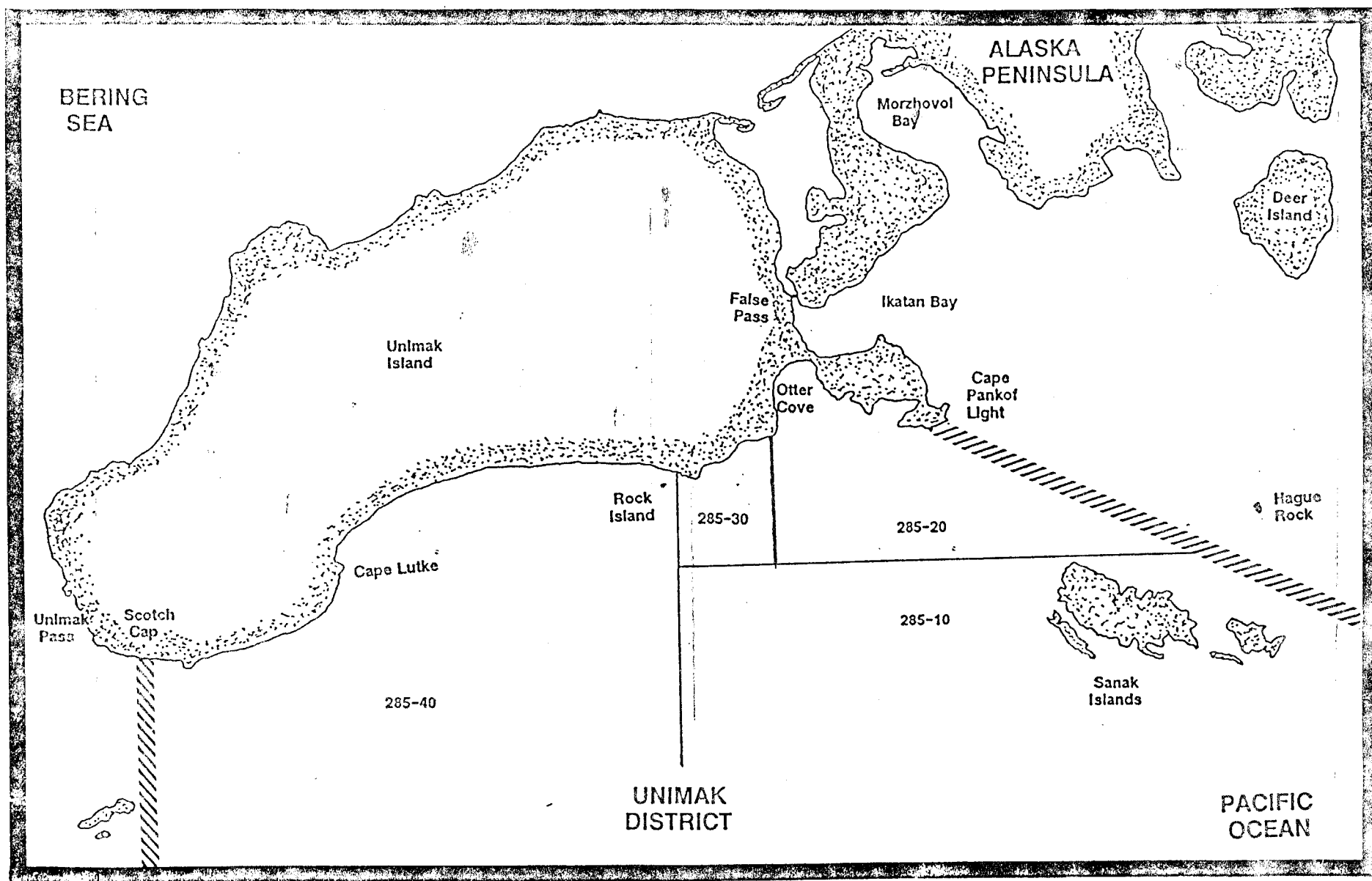


South Central District Salmon Statistical Harvest Areas.

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Southwestern District Salmon Statistical Harvest Areas.



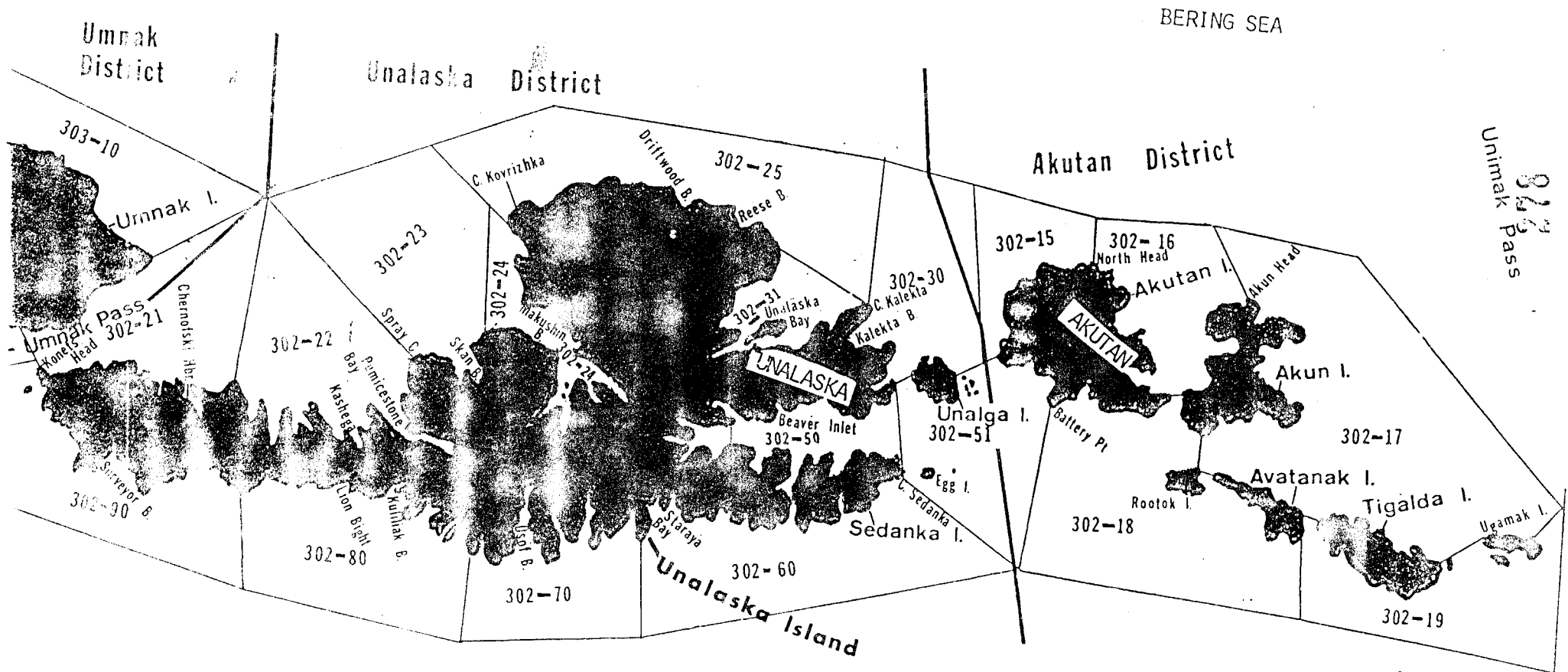
Unimak District Salmon Statistical Harvest Areas.

# ALEUTIAN ISLANDS AREA

UNALASKA AND AKUTAN DISTRICTS

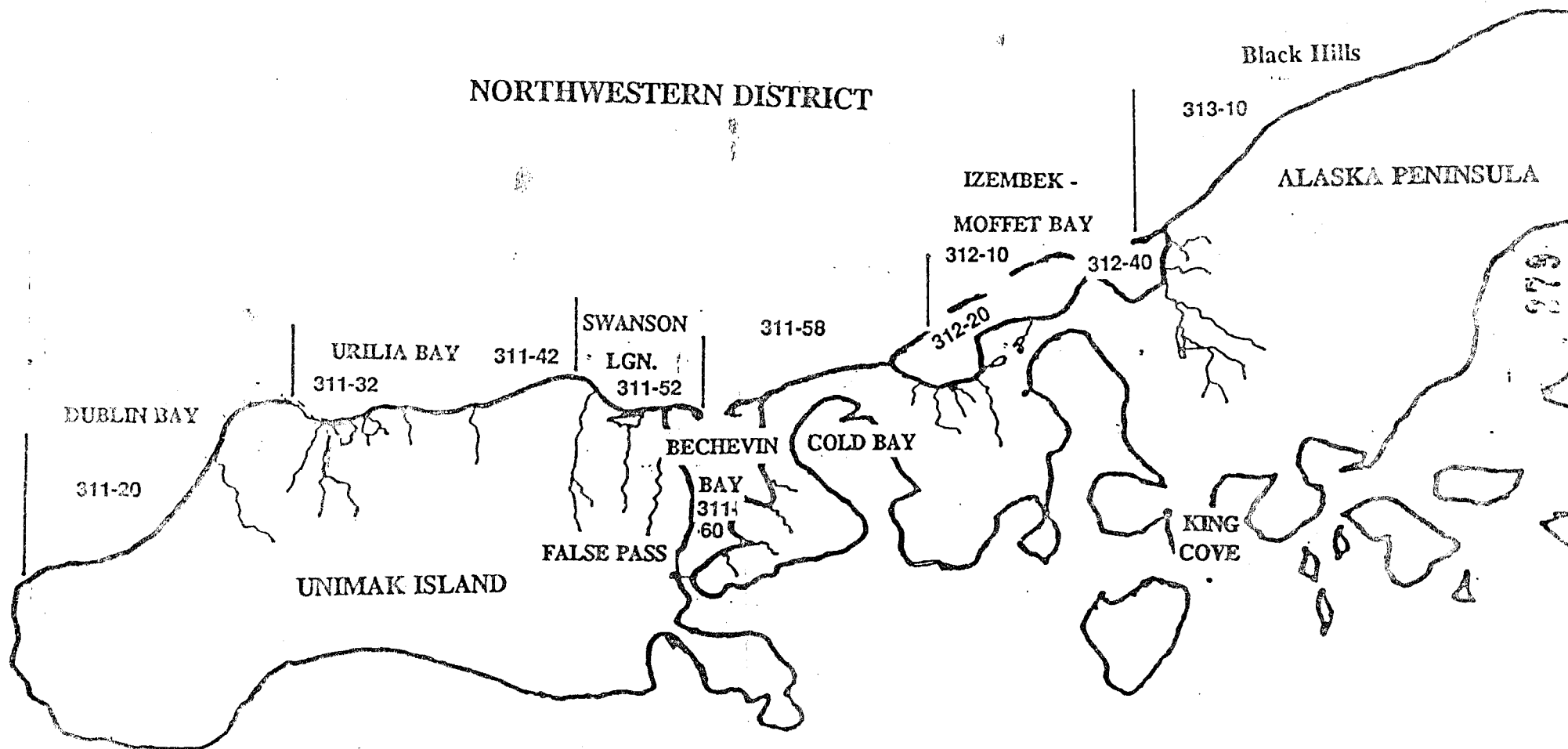
Statistical Chart For **SALMON** And **HERRING**

Do not use for shellfish or bottomfish.

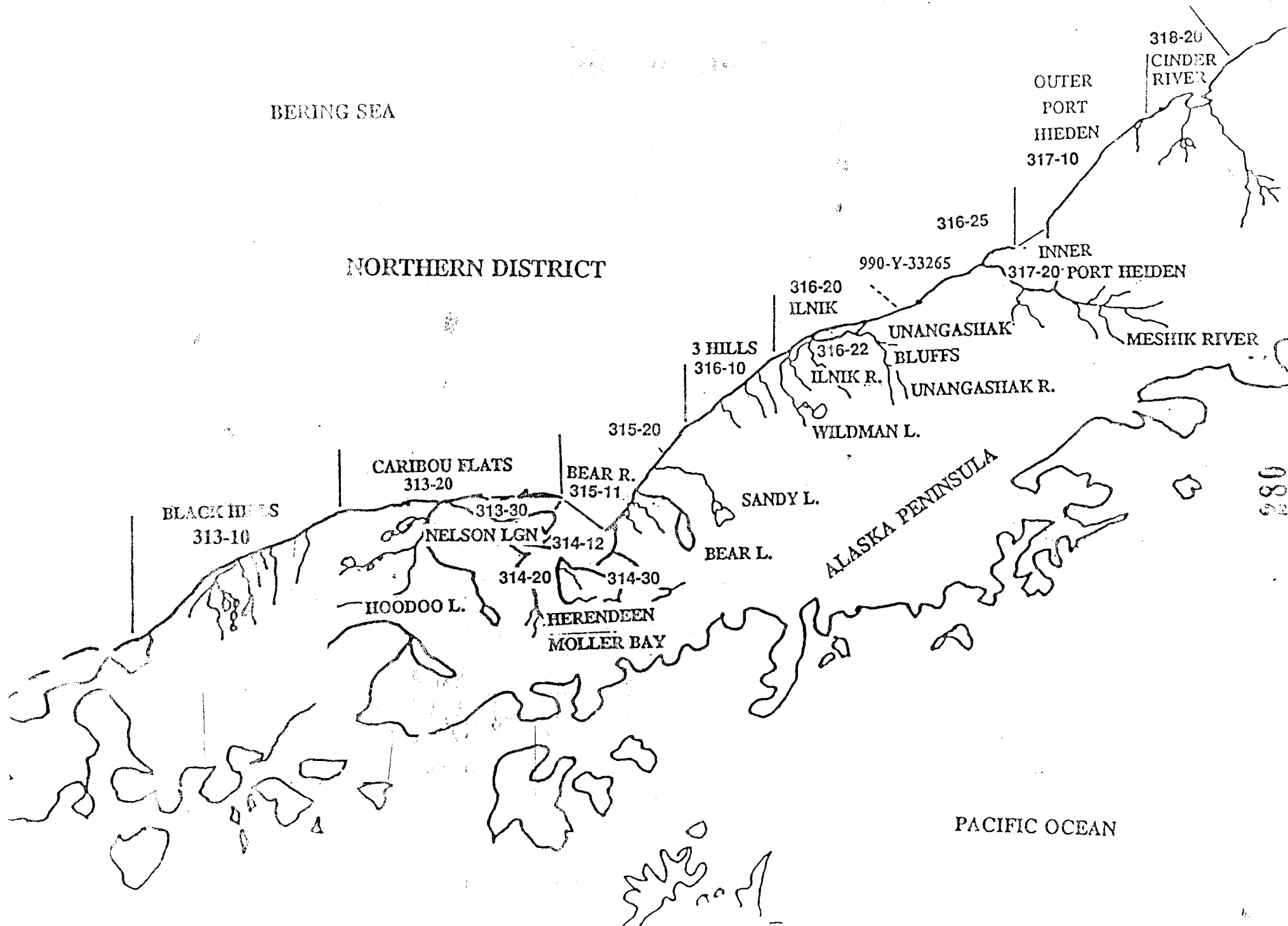


ALASKA DEPARTMENT OF FISH AND GAME  
APRIL 1979

# NORTHWESTERN DISTRICT



Northwestern District Salmon Harvest Statistical Areas.



Nothern District Salmon Harvest Statistical Areas.

# CALENDAR WEEKS TO BE USED FOR CATCH STATISTICS

STAT WEEK	YEAR/DATE 1987	YEAR/DATE 1988	YEAR/DATE 1989	YEAR/DATE 1990	YEAR/DATE 1991	YEAR/DATE 1992	YEAR/DATE 1993	YEAR/DATE 1994	YEAR/DATE 1995
1	0101 - 0103	0101 - 0102	0101 - 0107	0101 - 0106	0101 - 0105	0101 - 0104	0101 - 0102	0101 - 0101	0101 - 0107
2	0104 - 0110	0103 - 0109	0108 - 0114	0107 - 0113	0106 - 0112	0105 - 0111	0103 - 0109	0102 - 0108	0108 - 0114
3	0111 - 0117	0110 - 0116	0115 - 0121	0114 - 0120	0113 - 0119	0112 - 0118	0110 - 0116	0109 - 0115	0115 - 0121
4	0118 - 0124	0117 - 0123	0122 - 0128	0121 - 0127	0120 - 0126	0119 - 0125	0117 - 0123	0116 - 0122	0122 - 0128
5	0125 - 0131	0124 - 0130	0129 - 0204	0128 - 0203	0127 - 0202	0126 - 0201	0124 - 0130	0123 - 0129	0129 - 0204
6	0201 - 0207	0131 - 0206	0205 - 0211	0204 - 0210	0203 - 0209	0202 - 0208	0131 - 0206	0130 - 0205	0205 - 0211
7	0208 - 0214	0207 - 0213	0212 - 0218	0211 - 0217	0210 - 0216	0209 - 0215	0207 - 0213	0206 - 0212	0212 - 0218
8	0215 - 0221	0214 - 0220	0219 - 0225	0218 - 0224	0217 - 0223	0216 - 0222	0214 - 0220	0213 - 0219	0219 - 0225
9	0222 - 0228	0221 - 0227	0226 - 0304	0225 - 0303	0224 - 0302	0223 - 0229	0221 - 0227	0220 - 0226	0226 - 0304
10	0301 - 0307	0228 - 0305	0305 - 0311	0304 - 0310	0303 - 0309	0301 - 0307	0228 - 0306	0227 - 0305	0305 - 0311
11	0308 - 0314	0306 - 0312	0312 - 0318	0311 - 0317	0310 - 0316	0308 - 0314	0307 - 0313	0306 - 0312	0312 - 0318
12	0315 - 0321	0313 - 0319	0319 - 0325	0318 - 0324	0317 - 0323	0315 - 0321	0314 - 0320	0313 - 0319	0319 - 0325
13	0322 - 0328	0320 - 0326	0326 - 0401	0325 - 0331	0324 - 0330	0322 - 0328	0321 - 0327	0320 - 0326	0326 - 0401
14	0329 - 0404	0327 - 0402	0402 - 0408	0401 - 0407	0331 - 0406	0329 - 0404	0328 - 0403	0327 - 0402	0402 - 0408
15	0405 - 0411	0403 - 0409	0409 - 0415	0408 - 0414	0407 - 0413	0405 - 0411	0404 - 0410	0403 - 0409	0409 - 0415
16	0412 - 0418	0410 - 0416	0416 - 0422	0415 - 0421	0414 - 0420	0412 - 0418	0411 - 0417	0410 - 0416	0416 - 0422
17	0419 - 0425	0417 - 0423	0423 - 0429	0422 - 0428	0421 - 0427	0419 - 0425	0418 - 0424	0417 - 0423	0423 - 0429
18	0426 - 0502	0424 - 0430	0430 - 0506	0429 - 0505	0428 - 0504	0426 - 0502	0425 - 0501	0424 - 0430	0430 - 0506
19	0503 - 0509	0501 - 0507	0507 - 0513	0506 - 0512	0505 - 0511	0503 - 0509	0502 - 0508	0501 - 0507	0507 - 0513
20	0510 - 0516	0508 - 0514	0514 - 0520	0513 - 0519	0512 - 0518	0510 - 0516	0509 - 0515	0508 - 0514	0514 - 0520
21	0517 - 0523	0515 - 0521	0521 - 0527	0520 - 0526	0519 - 0525	0517 - 0523	0516 - 0522	0515 - 0521	0521 - 0527
22	0524 - 0530	0522 - 0528	0528 - 0603	0527 - 0602	0526 - 0601	0524 - 0530	0523 - 0529	0522 - 0528	0528 - 0603
23	0531 - 0606	0529 - 0604	0604 - 0610	0603 - 0609	0602 - 0608	0531 - 0606	0530 - 0605	0529 - 0604	0604 - 0610
24	0607 - 0613	0605 - 0611	0611 - 0617	0610 - 0616	0609 - 0615	0607 - 0613	0606 - 0612	0605 - 0611	0611 - 0617
25	0614 - 0620	0612 - 0618	0618 - 0624	0617 - 0623	0616 - 0622	0614 - 0620	0613 - 0619	0612 - 0618	0618 - 0624
26	0621 - 0627	0619 - 0625	0625 - 0701	0624 - 0630	0623 - 0629	0621 - 0627	0620 - 0626	0619 - 0625	0625 - 0701
27	0628 - 0704	0626 - 0702	0702 - 0708	0701 - 0707	0630 - 0706	0628 - 0704	0627 - 0703	0626 - 0702	0702 - 0708
28	0705 - 0711	0703 - 0709	0709 - 0715	0708 - 0714	0707 - 0713	0705 - 0711	0704 - 0710	0703 - 0709	0709 - 0715
29	0712 - 0718	0710 - 0716	0716 - 0722	0715 - 0721	0714 - 0720	0712 - 0718	0711 - 0717	0710 - 0716	0716 - 0722
30	0719 - 0725	0717 - 0723	0723 - 0729	0722 - 0728	0721 - 0727	0719 - 0725	0718 - 0724	0717 - 0723	0723 - 0729
31	0726 - 0801	0724 - 0730	0730 - 0805	0729 - 0804	0728 - 0803	0726 - 0801	0725 - 0731	0724 - 0730	0730 - 0805
32	0802 - 0808	0731 - 0806	0806 - 0812	0805 - 0811	0804 - 0810	0802 - 0808	0801 - 0807	0731 - 0806	0806 - 0812
33	0809 - 0815	0807 - 0813	0813 - 0819	0812 - 0818	0811 - 0817	0809 - 0815	0808 - 0814	0807 - 0813	0813 - 0819
34	0816 - 0822	0814 - 0820	0820 - 0826	0819 - 0825	0818 - 0824	0816 - 0822	0815 - 0821	0814 - 0820	0820 - 0826
35	0823 - 0829	0821 - 0827	0827 - 0902	0826 - 0901	0825 - 0831	0823 - 0829	0822 - 0828	0821 - 0827	0827 - 0902
36	0830 - 0905	0828 - 0903	0903 - 0909	0902 - 0908	0901 - 0907	0830 - 0905	0829 - 0904	0828 - 0903	0903 - 0909
37	0906 - 0912	0904 - 0910	0910 - 0916	0909 - 0915	0908 - 0914	0906 - 0912	0905 - 0911	0904 - 0910	0910 - 0916
38	0913 - 0919	0911 - 0917	0917 - 0923	0916 - 0922	0915 - 0921	0913 - 0919	0912 - 0918	0911 - 0917	0917 - 0923
39	0920 - 0926	0918 - 0924	0924 - 0930	0923 - 0929	0922 - 0928	0920 - 0926	0919 - 0925	0918 - 0924	0924 - 0930
40	0927 - 1003	0925 - 1001	1001 - 1007	0930 - 1006	0929 - 1005	0927 - 1003	0926 - 1002	0925 - 1001	1001 - 1007
41	1004 - 1010	1002 - 1008	1008 - 1014	1007 - 1013	1006 - 1012	1004 - 1010	1003 - 1009	1002 - 1008	1008 - 1014
42	1011 - 1017	1009 - 1015	1015 - 1021	1014 - 1020	1013 - 1019	1011 - 1017	1010 - 1016	1009 - 1015	1015 - 1021
43	1018 - 1024	1016 - 1022	1022 - 1028	1021 - 1027	1020 - 1026	1018 - 1024	1017 - 1023	1016 - 1022	1022 - 1028
44	1025 - 1031	1023 - 1029	1029 - 1104	1028 - 1103	1027 - 1102	1025 - 1031	1024 - 1030	1023 - 1029	1029 - 1104
45	1101 - 1107	1030 - 1105	1105 - 1111	1104 - 1110	1103 - 1109	1101 - 1107	1031 - 1106	1030 - 1105	1105 - 1111
46	1108 - 1114	1106 - 1112	1112 - 1118	1111 - 1117	1110 - 1116	1108 - 1114	1107 - 1113	1106 - 1112	1112 - 1118
47	1115 - 1121	1113 - 1119	1119 - 1125	1118 - 1124	1117 - 1123	1115 - 1121	1114 - 1120	1113 - 1119	1119 - 1125
48	1122 - 1128	1120 - 1126	1126 - 1202	1125 - 1201	1124 - 1130	1122 - 1128	1121 - 1127	1120 - 1126	1126 - 1202
49	1129 - 1205	1127 - 1203	1203 - 1209	1202 - 1208	1201 - 1207	1129 - 1205	1128 - 1204	1127 - 1203	1203 - 1209
50	1206 - 1212	1204 - 1210	1210 - 1216	1209 - 1215	1208 - 1214	1206 - 1212	1205 - 1211	1204 - 1210	1210 - 1216
51	1213 - 1219	1211 - 1217	1217 - 1223	1216 - 1222	1215 - 1221	1213 - 1219	1212 - 1218	1211 - 1217	1217 - 1223
52	1220 - 1226	1218 - 1224	1224 - 1230	1223 - 1229	1222 - 1228	1220 - 1226	1219 - 1225	1218 - 1224	1224 - 1230
53	1227 - 1231	1225 - 1231	1231 - 1231	1230 - 1231	1229 - 1231	1227 - 1231	1226 - 1231	1225 - 1231	1231 - 1231

# PERMANENT SALMON WEEKS

Due to a change in statistical weeks from year to year, beginning with the 1990 season, salmon catches will be kept in seven day periods which will be called permanent salmon weeks and will remain the same each season. The permanent salmon weeks are the same as the 1987 statistical weeks.

<u>Week</u>	<u>Duration</u>
A	April 26-May 2
B	May 3-9
C	May 10-16
D	May 17-23
E	May 24-30
F	May 31-June 6
G	June 7-13
H	June 14-20
I	June 21-27
J	June 28-July 4
K	July 5-11
L	July 12-18
M	July 19-25
N	July 26-August 1
O	August 2-8
P	August 9-15
Q	August 16-22
R	August 23-29
S	August 30-September 5
T	September 6-12
U	September 13-19
V	September 20-26
W	September 27-October 3
X	October 4-10



ALASKA PENINSULA AND ALEUTIAN ISLANDS MANAGEMENT  
AREAS SAC ROE HERRING REPORT AND THE ALASKA PENINSULA  
MANAGEMENT AREA FOOD AND BAIT HERRING REPORT, 1991

By

James N. McCullough

and

Mark E. Stopha

Regional Information Report' No. 4K91-20

Alaska Department of Fish and Game  
Division of Commercial Fisheries  
211 Mission Road  
Kodiak, Alaska

October 1991

'The Regional Information Report Series was established in 1987 to provide an informational access system for all unpublished divisional reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accommodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may contain preliminary data; this information may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or the Division of Commercial Fisheries.

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Seasonal employees Chris Sundby, Ralph Andrew, and Judy Hamik collected and recorded data. Hal Terry and Dave Henley, ADF&G pilots, provided most of the aircraft support. Robert Murphy collected some of the herring samples in Port Moller. Peter Pan Seafoods, Inc. at Port Moller, King Cove, and Squaw Harbor, and Pacific Harvest at Port Moller provided catch samples. Joanne Brodie aged samples and produced Lotus files. Pete Probasco provided supervisory support and editorial assistance.

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## ABSTRACT

By regulation, the 1991 herring sac roe season extends from April 15 through July 15 in the Alaska Peninsula and Aleutian Islands waters and the Alaska Peninsula herring food and bait season extends from August 15 through February 28. However, the opening of the Unimak, Akutan, Unalaska, Umnak, and Adak Districts occurred from April 15 through June 15; the Port Moller District was opened from May 17 through June 30; the Amak and Port Heiden Districts was open from April 15 through June 30; and the Sand Point, Pavlof, and King Cove Districts were opened from April 15 through July 15. During the herring food and bait season the Port Heiden, Port Moller, and Amak Districts were closed for the season; the King Cove District was open from August 15 through August 20; and the Pavlof and Sand Point Districts were open from August 15 through February 28.

In 1991, commercial sac roe catches occurred in North Peninsula waters from May 17 through July 4 and in South Peninsula waters from May 16 to June 11. No sac roe harvest occurred in the Aleutian Islands Management Area. The North Peninsula catch was 1,313.0 tons and the South Peninsula catch was 157.4 tons, producing a total Alaska Peninsula catch of 1,470.5 tons. The 1991 catch was 71% above the recent five year average of 862.4 tons. Eighteen purse seine permit holders made 85 deliveries to two companies that purchased herring. The average roe recovery (not counting herring purchased as bait during the sac roe season) was 9.12% for the North Peninsula, 9.66% for the South Peninsula, and overall was 9.19%. The average price per ton was \$400 for 10% roe recovery and  $\pm$  \$50 for each percentage point above or below 10%, giving a sac roe ex-vessel value of about \$439,244 for the Alaska Peninsula sac roe fishery. During the sac roe season, 307.3 tons of herring were purchased in the Port Moller District as bait herring. When caught, the herring had a roe percentage of about 10%. These herring had been feeding and the fish became "belly burned" and unmarketable within 21 hours after being caught. The "belly burned" herring (307.2 tons) were purchased at \$50 per ton.

A total biomass estimate for the North Peninsula was not possible due to budget constraints. The last herring survey was flown on June 7. Fishermen reported herring entering the Port Moller District as late as mid July. The minimum herring biomass in the Port Moller District was estimated at 8,400 tons. A total biomass estimate for the South Peninsula was not possible; herring are believed to have arrived late in the season when department staff were working on salmon projects, or during periods of poor survey conditions.

In 1991, commercial food and bait catches occurred in South Peninsula waters from August 18 through August 19. The North Peninsula food and bait season was closed because of the 16% exploitation rate of Port Moller District stocks during the sac roe season and the unknown origin of herring stocks in North Peninsula coastal waters during the food and bait season. The South Peninsula catch of 161.4 tons was harvested from the King Cove District. The 1991 catch was the first since 1982, when 565 tons were harvested. Two purse seine permit holders made four deliveries to one company that purchased herring. The average price per ton was \$300 giving a food and bait ex-vessel value of about \$48,420 for the Alaska Peninsula food and bait fishery.

KEY WORDS: Alaska Peninsula, Aleutian Islands, herring, catch, age, length, weight, sex

## INTRODUCTION

The Alaska Peninsula and Aleutian Islands Management Areas (Figure 1) are described as Management Area "M" and are divided into three subareas; (1) the South Peninsula, consisting of Pacific Ocean coastal waters extending west of Kupreanof Point to 163°30' W. long. on Unimak Island; (2) the Aleutian Islands, consisting of Bering Sea waters extending west of Unimak Pass to the international dateline and Pacific Ocean waters extending west from 163°30' W. long. on Unimak Island to the international dateline; and (3) the North Peninsula, consisting of Bering Sea waters extending west from Cape Menshikof to Cape Sarichef (Figures 2-6).

The North Peninsula is comprised of three districts and 23 statistical areas, the South Peninsula is comprised of three districts and 45 statistical areas, and the Aleutian Islands is comprised of five districts and 41 statistical areas. Commercial herring fishing normally begins about the last week of May in North Peninsula waters and about mid-May in South Peninsula waters. The Aleutian Islands have had no reported sac roe harvest since at least 1979.

Commercial herring fisheries have been regulated by emergency order to achieve exploitation mandates by the Board of Fisheries and address problems with wastage. A management plan (McCullough 1991) and other directives from the board set policies by which these fisheries are allowed to operate.

Pacific herring (*Clupea pallasii*) have been reported throughout the South Peninsula and most areas in the North Peninsula. The major concentration of herring and fishing effort in the North Peninsula occurs in the Bear River, Port Moller Bay, and Herendeen Bay Sections, while most of the known herring stocks and fishing effort in South Peninsula waters occurs in the Shumagin Islands Stepovak Bay Section, Pavlof Bay, and Canoe Bay Section.

From 1981 through 1991, the Alaska Department of Fish and Game (ADF&G) has deployed field crews in the Alaska Peninsula for the purpose of collecting data and to monitor the fishery. Crews have been successful in collecting samples and documenting spawning areas and substrate. Aerial surveys have been used with limited success to monitor the fishery, primarily due to the large area involved, weather, water conditions, and the sporadic and currently unpredictable appearance of the herring. In the ten years that the ADF&G has been conducting aerial surveys in the Alaska Peninsula, only surveys flown in 1989 and 1991 are thought to have provided an accurate assessment of the total spawning biomass in the Port Moller District.

Aerial surveys of the Port Moller area by Alaska Department of Fish and Game (ADF&G) personnel in 1976 reported numerous schools of herring in Herendeen Bay (Warner and Shafford 1979). The first commercial catches of sac roe herring in North Peninsula waters occurred in 1982 when 513.5 tons were harvested (Table 1). From 1985-90, an average of 542.5 tons have been harvested in the sac roe fishery. The majority (61.6%) of the harvest was taken from Herendeen and Moller Bays, while the remaining balance of the catch (38.4%) was taken off the Bering Sea coast between Entrance Point and the Seal Islands (Table 2). Prior to 1982, fishing vessels destined to or returning from the Togiak herring fishery frequently looked for herring in the Port Moller area but made no deliveries. Since 1982, a commercial sac roe fishery has developed in both Port Moller and

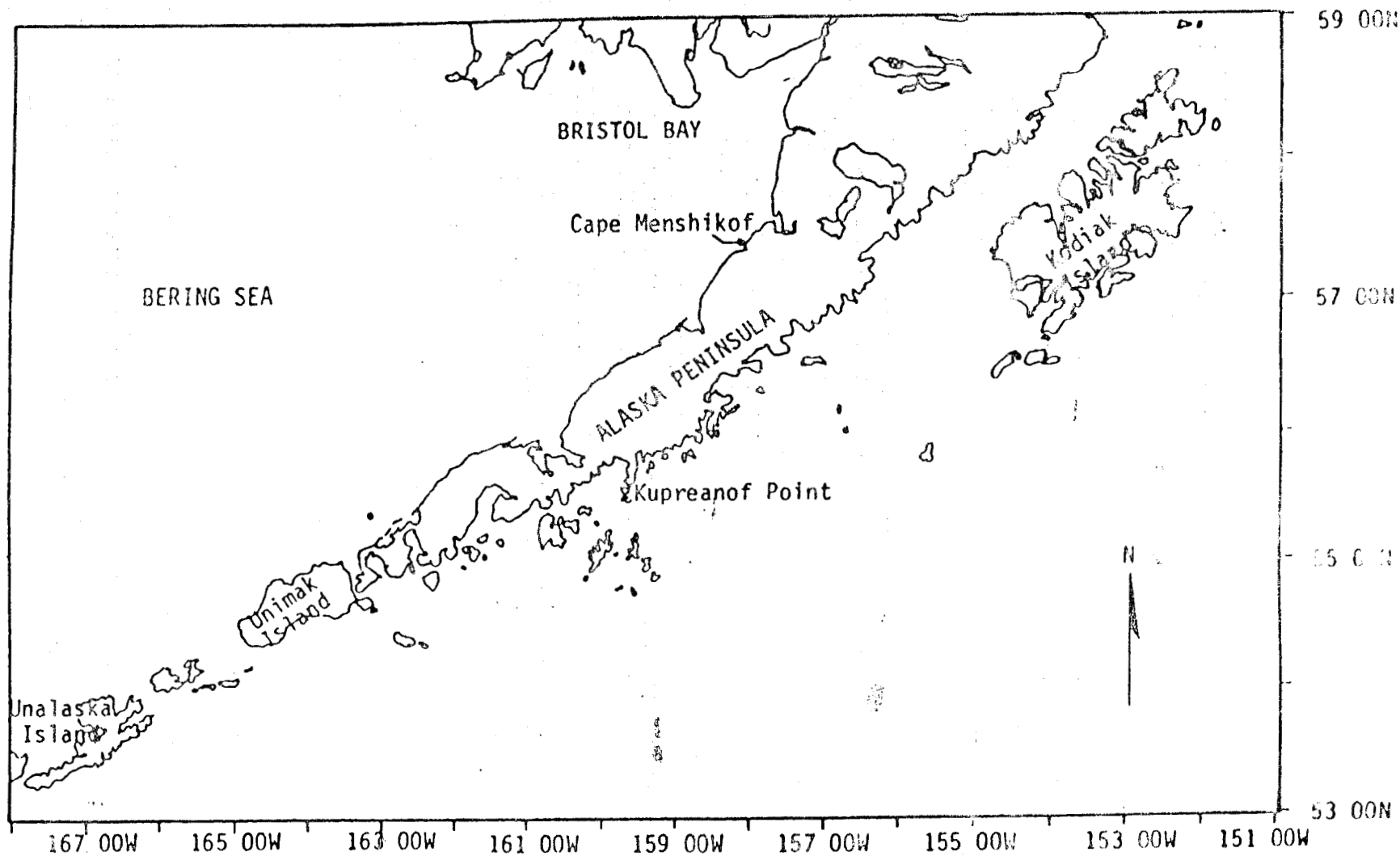


Figure 1. Map of the Alaska Peninsula and Eastern Aleutian Islands Management Areas, the study area on the Pacific Ocean portion of the map is from Kupreanof Point to Unalaska Island and on the Bering Sea from Unalaska Island to Cape Menchikof.



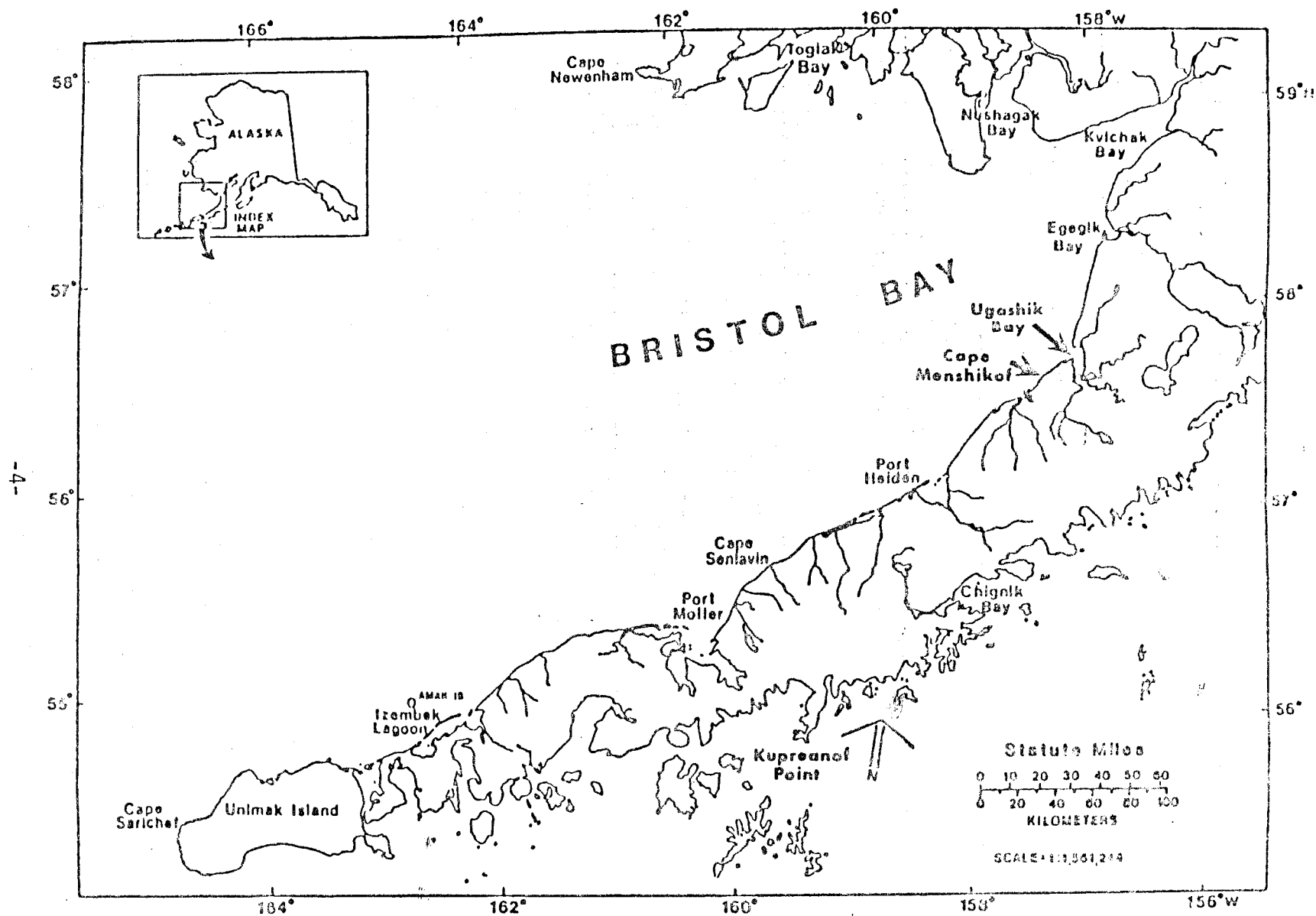


Figure 2. Map of the Alaska Peninsula Area from Kvichak Bay to Unimak Island.

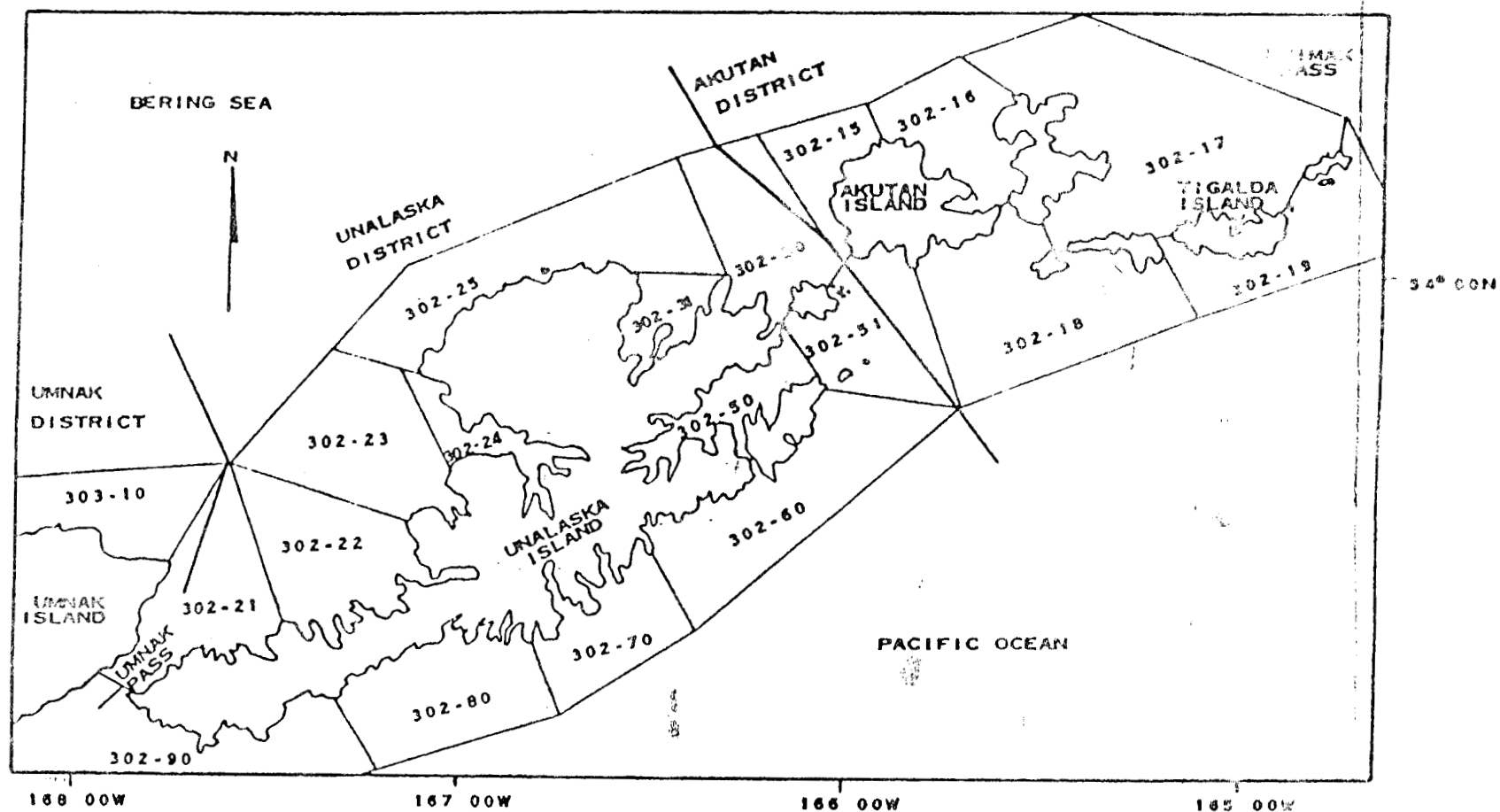


Figure 3. Map of the Aleutian Islands Area from Unimak Pass to Unimak Pass with the statistical herring fishing areas shown.

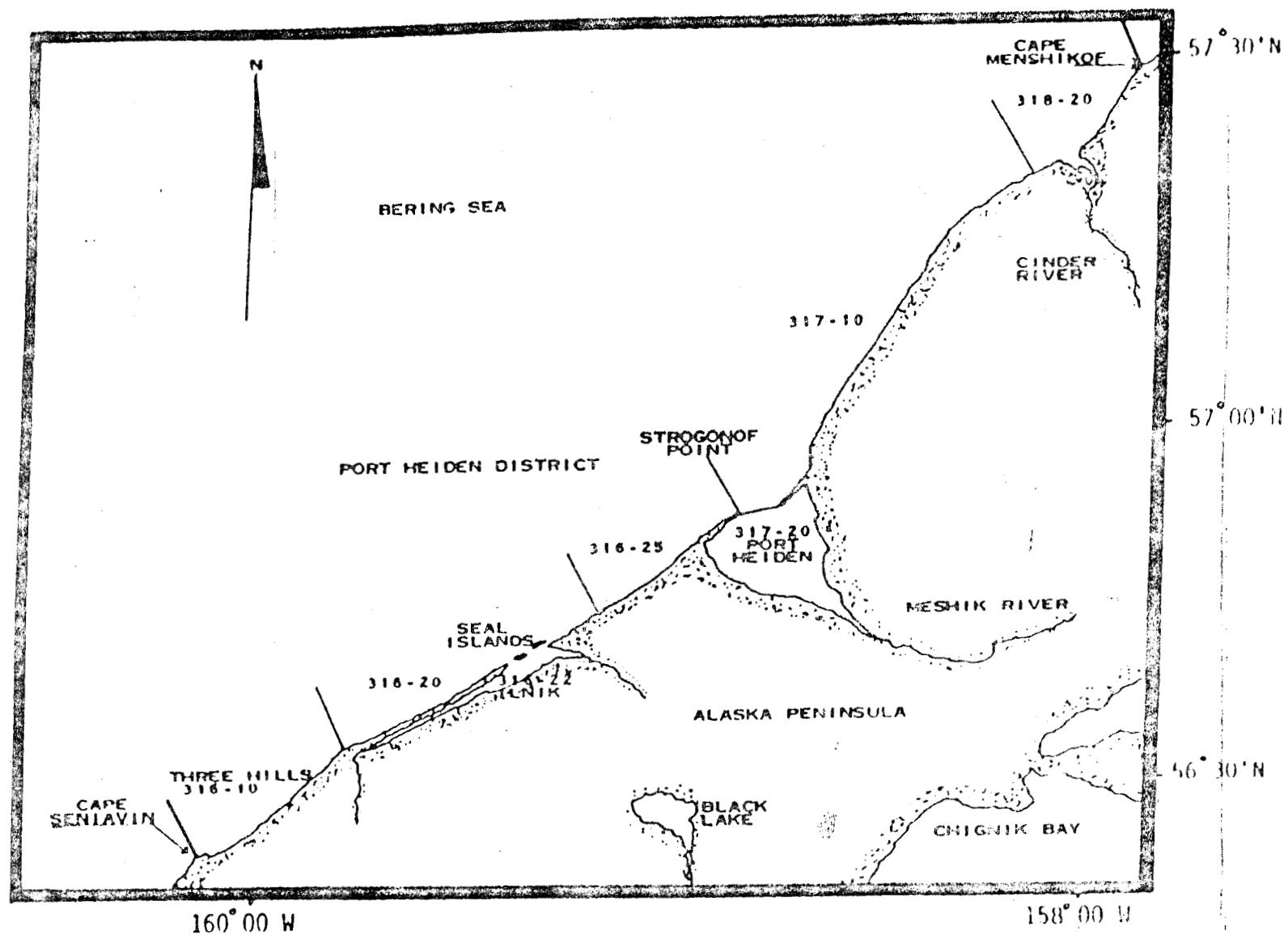


Figure 4. Map of the Alaska Peninsula Area from Cape Seniavin to Cape Menshikof with the statistical herring fishing areas shown.

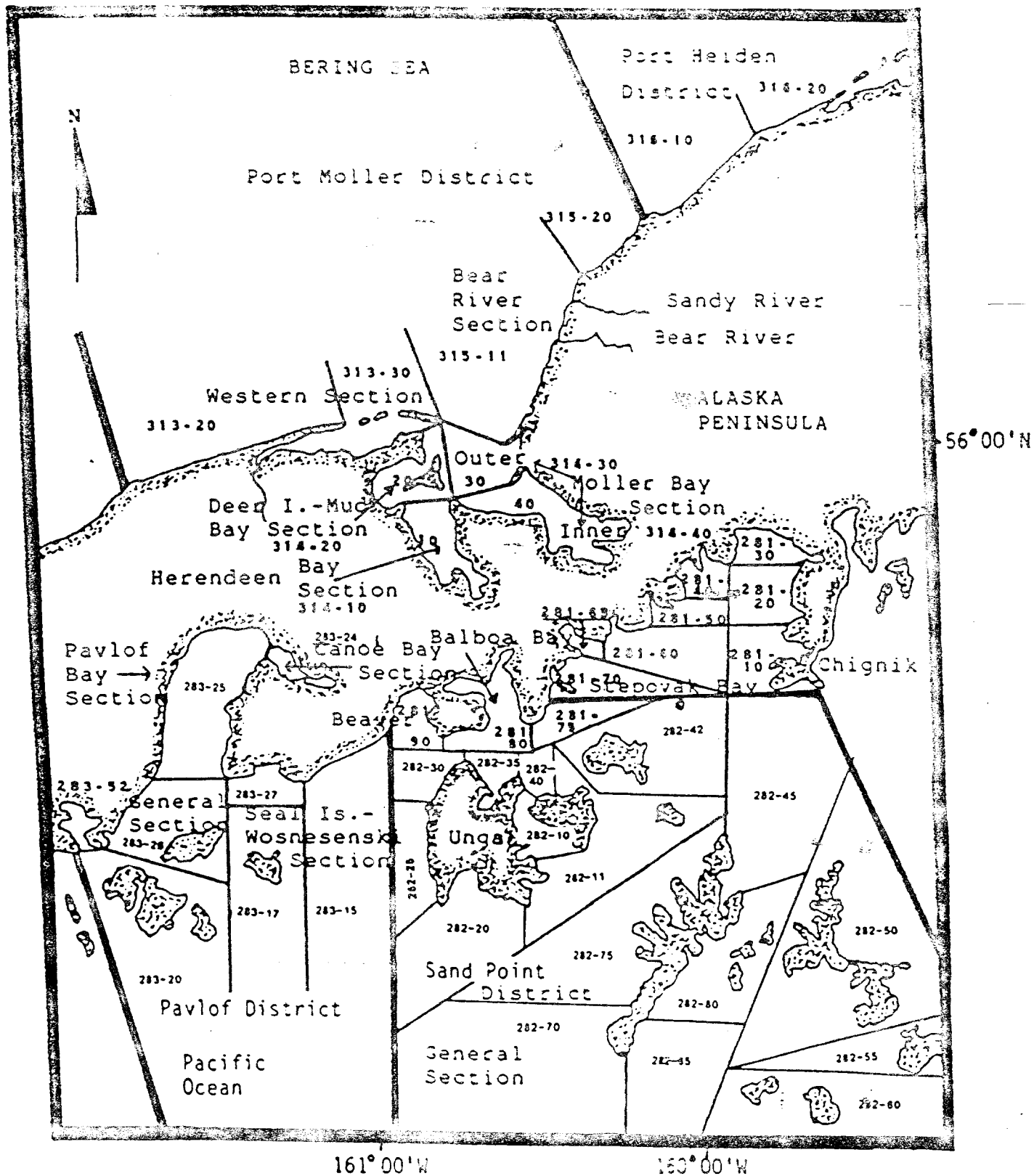


Figure 5. Map of the Alaska Peninsula Area from Bear Bay to Kupreanof Point with the statistical herring fishing areas shown.



Table 1. Alaska Peninsula Management Area commercial herring sac roe catch by time period and area, 1979-91 (short tons).

Year	South Peninsula	South Peninsula Time Period	North Peninsula	North Peninsula Time Period	Total
1979	10.1	July 4-July 4	0.0		10.1
1980	453.0	May 18-July 14	0.0		453.0
1981	787.0	May 9-June 23	0.0		787.0
1982	176.2	May 31-June 14	513.5	May 31-June 12	689.7
1983	0.0		637.5	May 9-May 29	637.5
1984	210.4	May 13-June 1	431.2	May 24-June 8	641.6
1985	345.0	June 1-June 11	716.0	May 24-June 4	1,061.0
1986	281.5	June 7-June 14	888.9	May 18-May 30	1,170.4
1987	319.0	June 8-June 19	512.4	May 9-June 5	831.4
1988	376.8	May 31-June 20	293.7	May 17-June 15	670.5
1989	310.0	May 13-June 19	744.7	May 28-June 23	1,054.7
1990	312.2	May 14-June 14	272.8	June 4-June 19	585.0
Average	319.9 a/		542.5		862.4
1991	157.4	May 16-June 11	1,313.0	May 17-July 4	1,470.5

a/ Five year 1986-90 average

Table 2. North Peninsula commercial herring sac roe catch by geographic area, 1982-91 (short tons).

Year	Deer Island	Herendeen Bay	Moller Bay	Bear River Bering Sea Coast	Total
1982	0.0	287.5	180.0	46.0	513.5
1983	0.0	520.5	36.0	81.0	637.5
1984	0.0	181.0	250.2	0.0	431.2
1985	73.0	100.0	256.0	287.0	716.0
1986	41.5	112.5	261.4	473.5	888.9
1987	0.0	160.8 a/	344.3	7.3	512.4
1988	0.0	8.2	285.5	0.0	293.7
1989	0.0	67.0	116.3	561.4	744.7
1990	0.0	155.8	117.1	0.0	272.8
1986-90 Average	8.3	100.9	224.9	208.4	542.5
1991	167.0	156.3	689.6	300.2	1,313.0

a/ at least 11 tons were caught in the Deer Island-Mud Bay Section.

Herendeen Bays, and the Bering Sea coast eastward from Port Moller (Table 2). The run timing of the North Peninsula stocks appear to be later than the Togiak stocks.

The South Peninsula herring sac roe fishery continues to develop since it began in 1979, with only Stepovak Bay, Canoe Bay, and the Shumagin Islands producing annual harvests since 1986 (Tables 1,3). Significant landings occurred in 1980 (453.0 tons), and peaked in 1981 (717.0 tons). The Board of Fisheries closed the South Peninsula sac roe fishery in 1983, allocating all catches to a food and bait fishery that failed to develop. Since 1984, the Board of Fisheries allocated the catch between the sac roe fishery (75% of the allowable harvest) and the food and bait fishery (25% of the allowable harvest). Since 1980 and during years in which commercial harvests occurred, landings were reported from 18 geographically separated locations; of these locations, only Canoe Bay produced an annual harvest (Table 3).

Food and bait deliveries occurred during 1982 (565.0 tons) and 1991 (161.4 tons) in South Peninsula waters (Table 4). During years that the North Peninsula herring food and bait season has been open, no fishing effort or deliveries have been documented.

The objectives of this report were: (1) to present the numbers of herring in the commercial catch for each statistical day in the Alaska Peninsula and Aleutian Islands Management Areas during 1991; (2) to estimate the age and sex composition of harvests; (3) to estimate the mean length and weight of gonads and herring harvested in commercial fisheries; and (4) to estimate the biomass of herring within each area. This information will provide a data base for developing brood tables, forecasting runs, and evaluating management goals. This report is intended as a reference document; interpretation and discussion of the data are therefore limited.

## METHODS

Commercial catch data were compiled by the Division of Commercial Fisheries of the Alaska Department of Fish and Game (ADF&G). These data were based on computer tabulations originating from individual sale receipts (fish tickets) given to fishermen at the time of delivery. Fish tickets and the computer generated summaries were edited by ADF&G Alaska Peninsula staff for errors and omissions. Because extensive fish ticket editing is usually required to finalize the data for any given year, later reports may contain minor differences in the catch information listed in this report.

Catches were sampled throughout the season from harvests in the fishing areas. Catch sampling occurred at Port Moller, Sand Point, and Canoe Bay. Herring were randomly sampled, usually collected from the holds of tender vessels to minimize scale loss. The harvest area of each tender sampled was determined through vessel operator interviews and fish ticket information.

Tender operators purchased fish from catcher vessels operating in combine with them. Since all catch sampling occurred before sorting within the cannery, there was no preselection of herring other than from delivery areas; although not



Table 3. South Peninsula commercial herring sac roe catch by geographic area, 1980-91 (short tons).

Year	Stepovak Bay a/	Balboa Bay	Pavlof Bay	Canoe Bay	Volcano- Dolgoi	Belkofski Bay	Lenard Harbor	Dolgoi Harbor	Shumagin Islands	Total
1980	195	132	114	12						453.0
1981	122	36	225	206	65	23	110			787.0
1982		5.0		171.2						176.2
1983 b/										0.0
1984	30.0	25.0		155.4						210.4
1985	11.0		95.0	239.0						345.0
1986 c/			61.0	140.5	13.0	8.0	59.0			281.5
1987 c/			92.0	118.0		38.0	59.0	12.0		319.0
1988 d/	0.3	11.0	69.0	236.5	17.0	12.0	31.0			376.5
1989	39.0	17.0	53.0	148.0			9.0	5.0	39.0	310.0
1990	71.7	20.8		120.4		3.2	5.9		90.4	312.2
1986-90 Average	22.2	9.8	55.0	152.7	3.4	12.2	32.8	3.4	25.9	317.4
1991	19.3	19.3		77.5					41.4	157.4

a/ The 1984-88 catches came from Ramsey Bay, the 1989 catch came from Granville Bay.

b/ In 1983 the South Peninsula sac roe fishery was closed, all herring catches were allocated to a food and bait fishery that did not develop.

c/ Stepovak Bay (Kupreanof Point to Swedania Point) was closed during 1986-87 due to the herring biomass being below the threshold required for a commercial fishery.

d/ Seven tons of green herring were dumped on May 7, and an additional two tons were dumped on May 11.

Table 4. South Peninsula commercial herring food and bait catches, 1982-91 (short tons).

Year	Harvest	Time Period
1982	565.0	January - February
1983	0.0	
1984	0.0	
1985	0.0	
1986	0.0	
1987	0.0	
1988	0.0	
1989	0.0	
1990	0.0	
1991	161.4	August 18 - August 19
1982-91 Average	72.6	

tested, each sample was assumed to be representative of the harvest within a sample area. While this insured that samples were randomly selected from each tender sampled, the samples may not be characteristic of the population structure because the distribution of the population is unknown in the fishery.

Age compositions were computed for the catch for each area sampled. Age was determined by examining scales (Warner and Shafford 1970). Scales were taken from the preferred area, which was located on the left side of the herring three rows below the lateral line and three scales posterior to the center of the operculum plate (Anonymous 1986). One scale was taken from each herring. Ages were recorded in actual fish age in years. The accuracy of age determination was not tested.

Standard length measurements were taken from the anterior most portion of the fish, including the lower jaw with the mouth closed, to the end of the vertebra (hypural plate) using a meter stick with 1 mm gradations and reading the measuring device to within 1 mm. Accuracy of a length measurement was within  $\pm 5$  mm. Mean lengths were calculated from an unweighted composite of the data collected from each area sampled.

Weight measurements of fish were taken using a digital scale with 2.0 g gradations and reading the scale device to within 2.0 g. Accuracy of a weight measurement was within  $\pm 2.0$  g. Mean weights were calculated from an unweighted composite of the data collected from each area sampled.

Sex compositions and sexual maturity were computed for each area sampled. Sex and sexual maturity was determined by either squeezing the fish or by internal observation of the gonads. Sexual maturity of herring were classified as: (1) virgin herring, (2) virgin herring with small sexual organs, (3) gonads occupying about half the ventral cavity, (4) gonads almost as long as body cavity, (5) gonads fill body cavity, (6) ripe gonads, (7) spent herring, and (8) recovering spent herring.

Biomass estimates of herring schools occurred during aerial surveys. The methodology of these surveys is described by Anonymous (1986). Observers fly at a recommended altitude of 1,500 feet and count the number of schools of herring and measure the length and width of each school. Each school is classified into one of three size classes based on its surface area: small schools with an area  $\leq 50$  m<sup>2</sup>; medium-sized schools with a surface area  $> 50$  m<sup>2</sup> and  $\leq 450$  m<sup>2</sup>; and large schools with a surface area  $> 450$  m<sup>2</sup>. The number of schools in each size-class are converted to Relative Abundance Indices (RAI) by assuming that one small school equals one RAI, one medium-sized school equals five RAI, and one large school equals surface area/50 m<sup>2</sup>. Aerial observers also classify the conditions on each survey with a rating system: one equals excellent, two equals good, three equals fair, four equals poor, five equals unsatisfactory. A conversion factor of 1.52 short tons/RAI is used for schools observed in water depths of 16 feet or less and 2.58 short tons/RAI is used for schools observed in water depths of 16 to 26 feet. In deep water, no attempt was made to convert RAI units into tonnages due to the lack of data. Conversion factors were calculated from surveys of schools of known biomass and surface area in known water depths that were conducted with commercial fishing vessels in Bristol Bay in 1983. If more than one survey of an area was conducted in a single day, then the largest number of RAI's recorded in each area was chosen as the most accurate index of biomass, because observers were more likely to underestimate the biomass

than they were to overestimate the biomass. Some schools of fish, especially in the Bering Sea and Stepovak Bay, may have been capelin or other finfish.

Harvest guidelines were established preseason and were based on past fishing performance, age class data, and biomass estimates from ADF&G and industry aerial surveys (Table 5). Areas where little or no data on stock biomass was known were open for exploration.

## SAC ROE FISHERY

### Results

In 1991, 85 landings were made in the Alaska Peninsula Management Area by 18 purse seine permit holders. The 1991 catch of 1,470.5 tons of herring was the largest catch ever for the Alaska Peninsula and was about 71% higher than the 1986-91 average harvest and about 2.5 times larger than the 1990 catch (Table 1). The increased catch was due to above average Port Moller District catches.

In 1991, 19 purse seine and 2 set gill net permit holders, 13 tenders, and three companies indicated an interest in fishing in the Alaska Peninsula during the sac roe season. However, only 18 purse seine permit holders made at least one landing and only two companies purchased herring. This was an increase of 14 purse seine permit holders making deliveries and a decrease of three companies buying herring from the 1990 level.

The total 1991 commercial herring sac roe and bait catch during the sac roe season for the Alaska Peninsula and Aleutian Islands Management Areas was 1,470.5 tons (1,163.2 tons of sac roe product and 307.3 tons of bait product), with an ex-vessel value of about \$439,244.

### Fishing Effort

In 1991, fishing effort was three times greater than in 1990, with most of the increase in effort occurring in the Port Moller District. The increased effort is primarily due to the South Peninsula salmon season being delayed until June 13, which gave salmon fishermen time to participate in the herring fishery.

In the Port Moller District, during the 1986-88 seasons, there was an average of 52 vessels present, although only a few permit holders actually made landings. Fishermen often stop in Port Moller on their way from the Togiak herring fishery for a few days to explore for commercial quantities of herring. In 1986, a trend began of increasing fishing effort effectively harvesting the early returning fish stocks. In order to shift fishing pressure from the earlier arriving stocks to the later more abundant stocks, the Port Moller District opening was initially delayed until May 30 from 1989 to 1991. However, the fishery may have opened prior to May 30 by emergency order if a large biomass of herring was documented in the area. The later opening date in the past three seasons has caused a trend

of decreasing effort. Fishermen returning from Togiak tend to pursue halibut or salmon fisheries rather than wait for the Port Moller herring fishery to open.

In 1991, a total of 10 tenders representing two processing companies registered for the Port Moller sac roe fishery. At least 15 purse seine skippers indicated interest in fishing for herring in the Port Moller District, although only 11 purse seine permit holders made at least one delivery. In 1991, a total of 5 tenders representing one processing company registered for the South Peninsula sac roe fishery. All 10 purse seine vessels that expressed interest in fishing South Peninsula waters made at least one delivery. Two set gill net skippers also expressed interest in fishing South Peninsula waters, but did not make any deliveries.

In areas open for exploration (Port Heiden District, Amak District, Unimak District, and General Sections of the King Cove and Sand Point Districts), liberal fishing time was allowed to give fishermen the opportunity to find and exploit unknown herring stocks. The liberal fishing time did not produce a harvest from any new herring stocks (Table 3).

#### North Peninsula

The 1991 projected guideline herring harvest for North Peninsula commercial herring fisheries was 300 tons (Table 5), which does not include herring harvested in sections open for exploration (McCullough 1991). The Port Heiden and Amak Districts were open for exploration continuously from April 15 through June 30. The Bear River, Western, Inner Port Moller Bay, and Outer Port Moller Bay Sections of the Port Moller District were open from May 17 through July 15. The Herendeen Bay and Deer Island-Mud Bay Sections of the Port Moller District were open from May 18 through July 15.

ADF&G herring staff arrived in Port Moller on May 14. Already on the scene were four fishing vessels without benefit of a spotter plane, and a single local processor lacking a herring crew. The first spotter pilot arrived in Port Moller on May 17 with word that about 1,000 tons of herring in several schools were present in Port Moller Bay. An ADF&G survey confirmed the pilot's report, and the Port Moller District, except for Herendeen and Deer Island-Mud Bay Sections, was opened at 7:00 P.M. May 17. No advanced notice for commercial fishing periods are given in the Port Moller District because herring often enter the district and spawn on a single tide. Because the first tender on the grounds was not due until the early morning of May 18 and because the processor would have to fly a crew into the area; the combine of fishing vessels limited their catch to about 90 tons, the capacity of the tender due to arrive shortly. A quota of 90 tons for Outer Port Moller Bay and 70 tons for Inner Port Moller Bay was established. Most of the herring observed in Outer Port Moller Bay on the afternoon of May 17, and an additional 250 tons that moved into Outer Port Moller Bay during the evening, headed into Inner Port Moller Bay during the night.

An ADF&G aerial survey on May 18 showed that only a few very small schools, believed to be spent herring remained in Outer Port Moller Bay. The visibility in Inner Port Moller Bay was poor and no herring were spotted. At the entrance to Herendeen Bay, several schools were observed with a minimum biomass estimate for the Herendeen Bay stock of 450 tons. At 1:00 P.M., the Deer Island-Mud Bay

Table 5. Alaska Peninsula Management Area commercial herring sac roe and food and bait guideline harvest levels, 1991 (short tons). a/

Area	-----Guideline Harvest-----		
	Sac Roe	Food/Bait	Total
South Peninsula			
Sand Point District			
Stepovak Bay Section	75	25	100
Balboa Bay Section	19	6	25
Beaver Bay Section	19	6	25
Pavlof District			
Pavlof Bay Section	56	19	75
Canoe Bay Section	94	31	125
General Section (Volcano Bay)	19	6	25
King Cove District			
Belkofski Section	15	5	20
Cold Bay Section	26	9	35
Deer Passage Section	15	5	20
Total	338	112	450
North Peninsula			
Port Moller District b/			
Herendeen Bay Section	90		75
Inner Moller Bay Section	90		75
Outer Moller Bay Section	120		100
Bear River Section			
Total	300		250
Total	638	112	750

a/The Aleutian Islands Management Area is open for exploration, no deliveries have occurred. Guideline harvest levels have not been established for areas open for exploration.

b/Herring abundance in the Port Moller District is difficult to estimate. If the Alaska Department of Fish and Game documents a herring biomass larger than expected the guideline harvest level will be adjusted inseason. Catches in the Port Heiden District may be subtracted from the Port Moller District guideline harvest if it is suspected that the herring are traveling into the Port Moller District.

and Herendeen Bay Sections were opened for commercial herring fishing. The guideline harvest levels for the District were set as they were pre-season: Inner Port Moller Bay at 90 tons, Herendeen Bay and Deer Island-Mud Bay Sections at 90 tons, and the Outer Port Moller Bay Section at 120 tons. Two additional tenders arrived and the processor flew in a crew from other areas.

Aerial surveys on May 19 indicated that additional herring were arriving in the Port Moller District. Most of these fish moved into Herendeen Bay, where all fishing activity was centered. Herendeen Bay and Outer Port Moller Bay were closed in the morning of May 20 with a harvest of about 167 tons from the Herendeen Bay stock.

Aerial surveys on May 20 indicated about 2,500 to 3,000 tons of spawned-out herring in the Bear River Section, which were probably the herring observed on May 17-19 that moved into Inner Port Moller Bay Section, spawned, and were now leaving the area.

Aerial surveys continued to find additional herring moving into Herendeen and Port Moller Bay during the next several days, and on May 23 the Outer Port Moller Bay Section was reopened to commercial herring fishing. On May 24-26, the fleet caught several schools of herring (84 tons) in the Outer Port Moller Bay and Bear River Sections. Most of the biomass coming into the District during this time period were believed to have spawned in the Inner Port Moller Bay Section.

Effort shifted to Inner Port Moller Bay on May 27-30, with about 67 tons being harvested. During this time period most of the herring observed coming into the District moved into the Inner Port Moller Bay Section.

On June 2-6, ADF&G observed a biomass of 1,000 to 1,500 tons of herring in the Bear River Section, and the entire Port Moller District was again opened to commercial herring fishing. About 594 tons of herring were harvested during this period, and the total biomass estimate to date for Port Moller, Herendeen Bay, and Bear River Section stocks was about 6,000 tons. On June 5, the processor suspended buying because enough herring had been caught to plug their processing capabilities for about 3 days. Most of the herring were caught on June 2-3. The first herring to be processed on June 2 had a roe percent of about 10%. All herring had been feeding heavily on krill, and within 21 hours of being caught problems with "belly burn" were becoming apparent. By June 3, the roe percentage dropped to 7%. The herring stomachs continued to release digestive acids, and the bellies of the herring were falling out of the fish. This in turn caused the roe to fall out of the fish. Processing continued over the next two days, but when roe recovery dropped below 7% the herring were no longer marketable. On June 6, the Port Moller and Port Heiden Districts were closed due to excessive waste of the resource because 307.3 tons of herring were dumped due to the "belly burn" problem. Although these herring were dumped the processor, fishermen, and tender operators negotiated a price settlement of \$50 per ton to both fishermen and tender operators for all herring purchased as "bait herring". The processor suspended buying of herring for the remainder of the season, and most of the tenders and fishing fleet departed.

Ripe herring continued to arrive in the District, moving into both Herendeen and Inner Port Moller Bay Sections. By June 12, the district biomass was estimated to be about 7,000 tons. Two fishing vessels and a floating processor with a daily capacity of 30 tons moved into the district on June 12. The Port Moller

District was opened on June 12 to herring fishing with the catch being limited to the daily processing capability of the processor to avoid further problems associated with "belly burned" fish.

By June 12, the Port Moller District catch was an estimated 1,012 tons; the Inner Port Moller Bay stock biomass was estimated at 4,201 tons, the Herendeen Bay stock biomass was estimated at 2,365 tons, and the Bear River stock biomass at 161 tons. The estimated harvest and biomass resulted in an exploitation rate of about 15 percent. During the period June 12 to July 4, an additional 250.6 tons were harvested from Herendeen Bay, Inner Port Moller Bay, and Outer Port Moller Bay.

Intensive aerial surveys by ADF&G to document spawning biomass and locations were not possible after June 5 due to the large area, weather, muddy water, and the unpredictable appearance of herring. Also, the latter portion of the fishery takes place during the beginning of the June sockeye salmon fishery when personnel is limited.

There were industry reports of herring entering the area from June 14 through June 26. An estimated 575 tons of new herring entered the district after ADF&G surveys were discontinued. Industry also reported hundreds of tons of juvenile (age 1 to 3) herring feeding in Herendeen Bay.

From May 23 through July 5, commercial spotter pilots and ADF&G observers reported about 30-40,000 tons of capelin in the Bear River and in Herendeen Bay Sections. By May 19, spent herring could be found in both the Inner and Outer Port Moller Bay Sections. By May 20 some 1,100 tons of spent herring from the Inner Port Moller Bay stock moved out of Port Moller and spent several days near the mouth of Bear River on the outside coast. Spent herring from the Herendeen Bay stock seem to acted differently than the Port Moller Bay stock. The spent herring in Herendeen Bay appear to remain within Herendeen Bay and at times mix with the new green and ripe herring entering Herendeen Bay. There appears to be only limited mixing of the green, ripe, and spent herring with the juvenile herring.

Table 6 lists ADF&G aerial surveys and industry reports after June 5 when ADF&G surveys were discontinued. From May 17 through June 5, 14 aerial surveys were flown in the Port Moller District by ADF&G. In past years biomass estimates have been difficult due to survey conditions and the rapid arrival and departure of fish. In 1991, fish were visible in substantial numbers on nine different surveys. Aerial survey estimates added to catches after surveys were discontinued resulted in an estimated biomass of 4,651 tons for the Inner Port Moller Bay stock. Herring spotted in Herendeen were added to the catch after June 12 and resulted in an estimated biomass of 2,278 tons for the Herendeen Bay stock. Herring were also observed spawning along the outside coast, south of the mouth of Bear River; this stock was estimated through catches and aerial surveys at 1,471 tons. Because survey conditions in the Port Moller District are often difficult and herring move in and out of the area over a period exceeding 60 days, the biomass estimates should be considered a reliable minimum biomass estimate. This data established the Port Moller District biomass at 8,400 tons, resulting in an exploitation rate of 16%.

No herring were caught in the Amak and Port Heiden Districts, although effort occurred in the Port Heiden District.



Table 6. Alaska Department of Fish and Game North Peninsula aerial herring biomass surveys, 1991 (short tons).

Date	Herendeen Bay			Inner Moller Bay			Outer Moller Bay /a			Bear River		
	RAI/b	Tons/c	Rating/d	RAI/b	Tons/c	Rating/d	RAI/b	Tons/c	Rating/d	RAI/b	Tons/c	Rating/d
May 17	0	0	2	276	514 /e	2	22	808 /e	2	0	0	2
May 18	180	1,080 /e	4	0	0	1	67	103	3	0	0	3
May 19	3	18	2	22	34 /e	2	12	18 /e	2	0	0	2
May 20	141	843	2	0	0	4	17	44 /e	2	928	2,394 /e,f	3
May 21	195	502 /e	2	274	417 /e,g		70	182 /e	1	146	377	3
May 22	0	0	3	11	17	3	0	0	2	67	174	2
May 24	0	0	2	9	13	2	186	282 /e	2	0	0	2
May 27	0	0	2	4	7 /e	2	0	0	2	0	0	3
May 28	0	0	2	51	77 /e,h	2	0	0	2	0	0	2
May 29	0	0	3	34	51 /e	3	0	0	3	0	0	3
May 31				124	188 /e	2						
June 3	0	0	1	0	0	1	0	0	1	253	652 /e,i	2
June 4				18	46	3	159	383	2	62	160 /e	2
June 5	28	43 /e	1	310	471 /e,j	1	107	162 /e	1	28	73 /e	1
June 6										0	0	1
June 14		135 /e,k										
June 23					125 /e,k							
June 26		115 /e,k			200 /e,k							
Total Biomass	2,278			4,651						1,471		

RAI units express the surface area of herring schools in terms of small schools (surface area equal to 532 square feet). For example, 10 RAI units are equivalent to 10 small herring schools, each with a surface area of 538 square feet.

-Continued-

Table 6. (page 2 of 2)

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/a No herring were observed spawning in the Outer Port Moller Bay Section. Herring in this Section were assigned to the Herendeen Bay or Inner Port Moller Bay stocks.

/b Relative Abundance Index (RAI): small school (less than 538 square feet) = 1 RAI unit  
medium school (532 square feet to 4,841 square feet) = 5 RAI units  
large school (square feet/538 square feet)

/c Tons: RAI units are multiplied by 1.52 (schools in water less than 16 feet of depth)  
RAI units are multiplied by 2.58 (schools in water 16 to 26 feet of depth)

/d Rating of survey: (1) Excellent, (2) Good, (3) Fair, (4) Poor, (5) Unsatisfactory

/e Used in calculating biomass estimate; all herring considered new fish.

/f 1,298 tons were considered new herring.

/g 242 tons were considered new herring.

/h 17 tons were considered new herring.

/i 352 tons were considered new herring.

/j 400 tons were considered new herring.

/k Commercial pilot report.

In the Port Moller District from May 17 through July 4, 1,005.8 tons of sac roe and 307.3 tons of bait herring were harvested by 11 purse seine permit holders (Table 7). The average roe recovery was 9.12% with an average price of about \$400/ton for 10% roe recovery and \$50/ton for the 307.3 tons that were purchased as bait herring, making the ex-vessel estimated value of the fishery \$378,921. About 15 purse seine permit holders indicated interest in fishing Port Moller waters, but only 11 purse seine permit holders made at least one delivery. A total of 59 deliveries were made.

Commercial catches of herring from the Port Moller District from 1982 to 1991 were landed from May 9 to July 4 (Figure 5, Table 1). Most catches were taken during a time period of 20 days or less (mid-May to mid-June). In 1991, the commercial catch occurred throughout the Port Moller District: Bear River Section (300.1 tons; Table 5), Outer Port Moller Bay Section (531.1 tons), Inner Port Moller Bay Section (158.4 tons), and Herendeen Bay and Mud Bay-Deer Island Sections (323.3 tons). Not since the 1988 season had herring been observed in the Port Moller District in commercial quantities prior to May 28.

The Port Moller District fishery was dominated by age 4 herring (Table 8, 9, Figure 7). Herendeen Bay catches had 72% age 4 and 11% age 7 herring and the Deer Island-Mud Bay catches had 65% age 4 and 18% age 7 herring. The Inner Port Moller Bay catches had 59% age 4, 13% age 5, and 16% age 7 herring and the Outer Port Moller Bay had 74% age 4 and 11% age 7 herring. Bear River area catches had 86% age 4 herring. Catches from Cape Kutuzof were different than other Port Moller District catches, with 37% age 4 and 40% age 7 herring. Age 3 herring which are typically only partially recruited into the fishery and comprised less than 3% of all catches. Typically a Bering Sea year class is not fully recruited into the fishery until age 6. The amount of age 4 herring in the catches in 1991 should produce substantial catches of age 5 herring in 1992.

Table 10 lists the North Peninsula herring sac roe average weights and lengths of herring samples by age group. Herring harvested in coastal waters near Cape Kutuzof averaged the largest (233 g and 257 mm) and herring harvested near the Bear River were the smallest (139 g and 227 mm).

Commercial fishermen reported spent herring on May 18 in the Outer Port Moller Bay Section; these herring probably spawned in the Inner Port Moller Bay Section on May 17. By May 20, an estimated 1,100 tons of spent herring were observed by ADF&G in the Bear River Section. Two small schools of herring, each about five tons, were observed by ADF&G on May 24 and May 25 spawning at low tide in the Inner Moller Bay area. The schools were located Southwest of Harbor Point in shallow water, spawning among sand bars. No vegetation was visible from the air where spawning occurred. On June 2-3, two different commercial spotter pilots reported herring spawning south of the mouth of Bear River among some large rock piles; this area had been the mouth of Bear River for several years, but in 1990 the river mouth cut a new channel about one mile further north. Commercial fishermen and pilots reported herring spawn from May 18 through early July in Left Head and Right Head of Moller Bay, and in several locations on several different dates along the beach from Harbor Point to Left Head in Moller Bay. Herring spawn was also reported in the sand flats east of Point Divide. No spawning herring were observed in Herendeen Bay.

Table 7. North Peninsula commercial herring sac roe catch by area, day, and percent roe, 1991 (short tons).

Area	Date	Catch		Percent Roe
		Food/Bait	Sac Roe	
Bear River (Bering Sea Coast)	May 25		8.2	15.50
	June 2		108.7	9.83
	June 3	116.3	67.0	7.57
	Total	116.3	183.8	9.26
Outer Moller Bay	May 17		96.6	8.00
	May 24		68.4	7.55
	May 26		7.7	9.80
	May 27		7.6	7.70
	June 3		41.7	8.20
	June 4	128.6	54.2	7.89
	June 5	62.3	42.7	8.93
	July 3		21.3	10.00
	Total	190.9	340.2	8.19
Inner Moller Bay	May 27		3.0	8.30
	May 29		35.4	8.09
	May 30		5.4	7.40
	May 31		14.9	7.80
	June 15		15.5	10.00
	June 24		22.2	10.00
	June 25		28.1	10.00
	June 26		33.9	10.00
	Total		158.4	9.25
Herendeen Bay	June 12		26.8	10.00
	June 14		49.5	10.00
	June 18		7.4	10.00
	June 21		9.4	10.00
	June 25		28.2	10.00
	July 2		10.3	10.00
	July 4		24.8	10.00
	Total		156.3	10.00
Deer Island	May 18		3.0	10.10
	May 19		99.2	9.79
	May 20		64.8	10.10
	Total		167.0	10.59
Total		307.3	1,005.8	9.12

Table 8. Estimated age composition of North Peninsula commercial herring sac roe catches by area and percent, 1985-91.

Year	Ages									
	2	3	4	5	6	7	8	9	10	11+
Herendeen Bay										
1985	0	5	49	21	15	6	4	0	0	0
1986	0	0	3	25	13	20	21	17	1	0
1987	0	2	4	22	24	17	13	10	6	2
1988	0	3	23	30	22	9	4	3	3	2
1989	0	0	2	62	22	5	1	1	0	7
1990	0	14	3	1	57	15	3	1	1	5
1991	0	2	72	5	2	11	4	0	2	3
Deer Island-Mud Bay										
1991	0	1	65	7	3	18	5	0	1	1
Inner Moller Bay										
1985	0	1	12	8	15	33	27	2	0	1
1986	0	1	7	21	12	18	19	20	1	1
1987	0	2	11	13	22	12	11	17	11	0
1988	0	1	30	29	12	6	5	5	8	5
1989	0	1	1	67	19	3	1	2	2	4
1990	0	13	4	2	49	16	5	2	2	6
1991	0	1	59	13	2	16	1	5	2	1
Outer Moller-Bering Sea Coast										
1985	0	1	26	16	20	17	17	1	1	0
1986	0	0	2	22	13	21	23	18	1	0
1987	0	2	48	9	14	5	11	8	3	0
1988	No catch in this section									
1989	0	0	0	6	26	6	24	7	10	21
1990	90	10	0	0	0	0	0	0	0	0
1991 /a	0	3	74	6	1	11	2	1	1	0
Bering Sea Coast										
Bear River area										
1991	0	2	86	8	0	4	1	0	0	1
Cape Kutuzof area										
1991	0	0	37	10	0	40	9	2	2	2

/a Outer Port Moller Bay Section samples only.

Table 9. Estimated age composition of North Peninsula commercial herring sac roe purse seine catches by area and day, 1991.

Date	Sample Size	Ages									
		2	3	4	5	6	7	8	9	10	11+
Herendeen Bay											
May 19	299	0.0	1.0	83.6	6.4	1.3	4.0	0.7	0.3	0.7	2.0
May 20	81	0.0	0.0	54.3	4.9	1.2	12.3	13.6	1.2	4.9	7.4
May 29	91	0.0	3.3	79.1	3.3	1.1	6.6	2.2	0.0	3.3	1.1
June 14	79	0.0	6.3	34.2	3.8	3.8	41.8	7.6	0.0	1.3	1.3
-----											
Total	550	0.0	2.0	71.5	5.3	1.6	11.1	3.8	0.4	1.8	2.5
Deer Island-Mud Bay											
May 19	154	0.0	1.3	75.3	7.8	1.9	5.2	5.2	0.0	2.6	0.6
June 2	130	0.0	0.0	52.3	6.9	3.1	32.3	4.6	0.0	0.0	0.8
-----											
Total	284	0.0	0.7	64.8	7.4	2.5	17.6	4.9	0.0	1.4	0.7
Inner Moller Bay											
May 29	87	0.0	1.1	58.6	12.6	2.3	16.1	1.1	4.6	2.3	1.1
-----											
Total	87	0.0	1.1	58.6	12.6	2.3	16.1	1.1	4.6	2.3	1.1
Outer Moller Bay											
May 17	191	0.0	1.0	77.5	8.9	2.1	5.8	1.0	3.1	0.5	0.0
May 24	56	0.0	3.6	55.4	8.9	0.0	17.9	8.9	1.8	1.8	1.8
May 30	87	0.0	4.6	69.0	2.3	1.1	17.2	1.1	1.1	2.3	1.1
June 3	98	0.0	1.0	44.9	10.2	1.0	32.7	8.2	1.0	0.0	1.0
June 4	248	0.4	4.0	89.5	2.8	0.8	2.4	0.0	0.0	0.0	0.0
-----											
Total	680	0.1	2.8	74.3	6.0	1.2	10.9	2.4	1.3	0.6	0.4
Bering Sea Coast											
Bear River area											
May 20	135	0.0	2.2	87.4	6.7	0.0	3.0	0.0	0.0	0.0	0.7
June 4	38	0.0	0.0	78.9	13.2	0.0	5.3	2.6	0.0	0.0	0.0
-----											
Total	173	0.0	1.7	85.5	8.1	0.0	3.5	0.6	0.0	0.0	0.6
Cape Kutuzof area											
June 2	68	0.0	0.0	36.8	10.3	0.0	39.7	8.8	1.5	1.5	1.5
-----											
Total	68	0.0	0.0	36.8	10.3	0.0	39.7	8.8	1.5	1.5	1.5

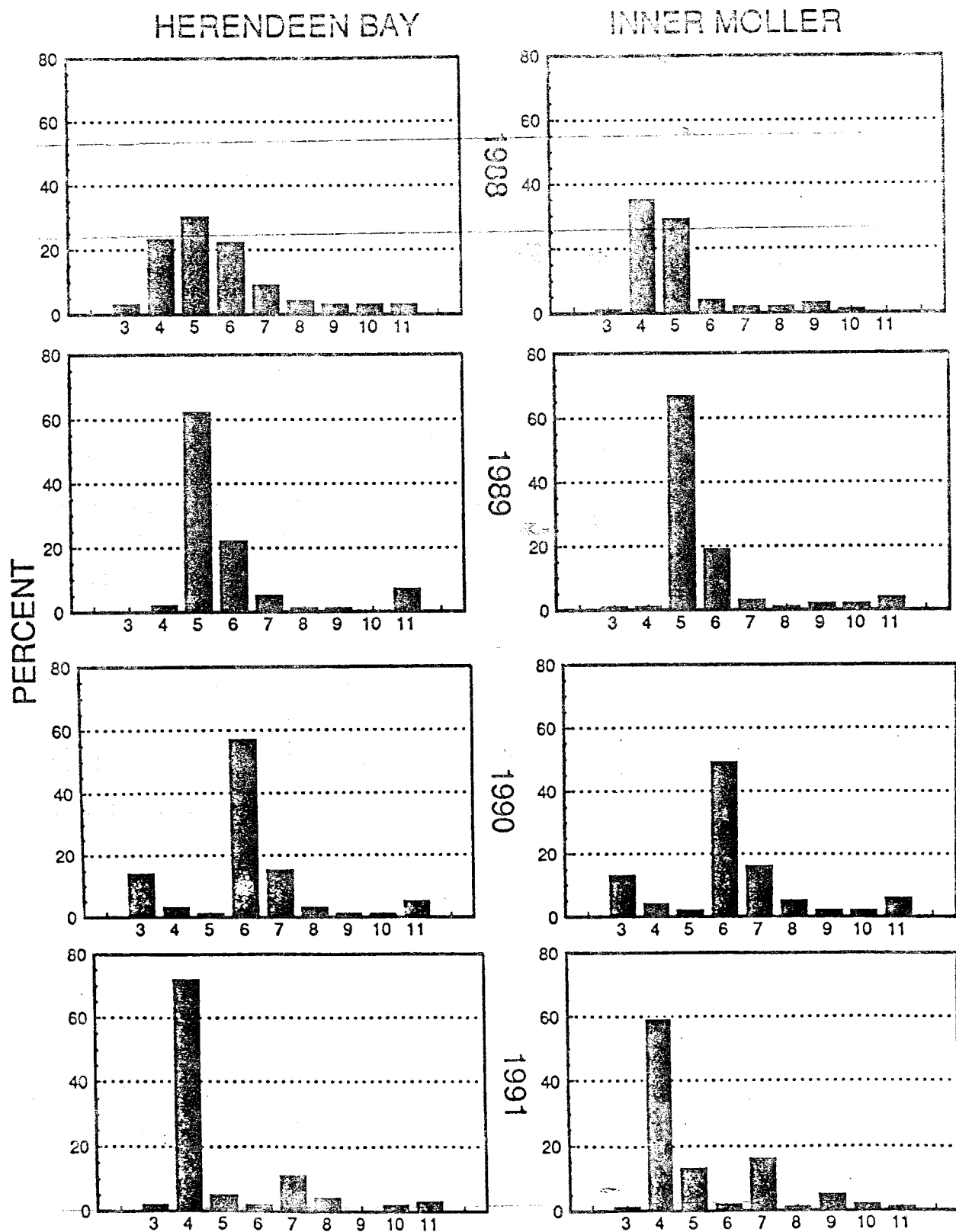


Figure 7. Age distribution of annual herring sac roe catches from Herendeen and Inner Moller Bays, 1988-91.

Table 10. Alaska Peninsula Management Area herring catch summary of average weights (g) and lengths (mm) by age, 1991.

Fishery/Area	Weight Length	Harvest (tons)	Sample Date	Age											Average	Sample Size
				2	3	4	5	6	7	8	9	10	11+			
Sac Roe-North Peninsula																
Herendeen Bay	Weight	156.3	19 May - 14 June	-	148	144	175	218	248	310	362	404	411	177	550	
	Length			-	221	225	236	254	263	278	285	293	303	235	550	
Deer Island-Mud Bay	Weight	167.0	19 May - 2 June	-	110	147	168	211	258	322	-	403	483	164	284	
	Length			-	210	230	241	256	268	283	-	299	321	242	284	
Inner Port Moller Bay	Weight	158.4	29 May	-	134	153	177	222	283	272	312	396	302	194	87	
	Length			-	215	227	239	265	270	275	280	298	290	241	87	
Outer Port Moller Bay	Weight	531.2	17 May - 4 June	57	131	141	162	191	263	284	331	326	433	164	678	
	Length			174	218	226	237	244	267	273	286	283	304	234	680	
Bear River area	Weight	191.5	20 May - 4 June	-	-	124	165	-	227	292	-	-	-	139	38	
	Length			-	212	224	233	-	265	270	-	-	318	227	173	
Cape Kutuzof	Weight	108.7	2 June	-	-	153	187	-	279	327	318	358	552	233	68	
	Length			-	-	232	247	-	273	286	278	287	325	257	68	
Sac Roe-South Peninsula																
Stepovak Bay	Weight	19.3	9 June	-	163	208	257	298	306	301	-	-	-	282	53	
	Length			-	223	239	236	270	271	274	-	-	-	263	53	
Balboa Bay	Weight	19.3	28 May	-	119	219	243	278	295	-	-	-	-	247	19	
	Length			-	208	244	256	262	270	-	-	-	-	253	19	
Shumagin Islands	Weight	41.4	16 May	-	-	201	276	249	282	308	-	-	-	258	46	
	Length			-	-	243	255	260	264	272	-	-	-	259	46	
Canoe Bay	Weight	77.5	29 May - 10 June	92	123	189	258	293	303	280	-	377	390	232	343	
	Length			192	204	230	252	265	267	261	-	279	300	244	343	
Food and Bait-South Peninsula																
Otter Cove	Weight	161.4	19 August	-	150	191	207	247	236	-	-	-	179	192	350	
	Length			-	223	239	244	255	267	-	-	-	238	240	351	



## South Peninsula

The 1991 projected guideline herring harvest for the South Peninsula fisheries was 338 tons (Table 5), which did not include herring harvested in sections open for exploration (McCullough 1991). The General Sections of the Sand Point and King Cove Districts and the Seal Cape-Wosnesenski Section of the Pavlof District were open for exploration. The South Peninsula herring fisheries were open seven days a week through the closure of the sac roe season (July 15) except for the Canoe Bay Section, which closed on June 1 and reopened on June 29.

South Peninsula commercial herring catches from 1980 to 1990 were landed from May 9 to June 23 and in 1991 were landed from May 16 to June 11 (Table 1). Most catches have been taken during a time period of 20 days or less. In 1991, the commercial catch occurred in four locations: Stepovak Bay (19.3 tons), Shumagin Islands (41.4 tons), Balboa Bay (19.3 tons), and Canoe Bay (77.5 tons; Table 11). From May 16 to June 11, 157.4 tons were harvested by 10 purse seine permit holders making 26 deliveries. The average roe recovery was 9.66%, with an average price of \$400/ton for 10% roe recovery, making the ex-vessel estimated value of the fishery \$60,323.

The first ADF&G survey to document herring occurred on May 19 in Canoe Bay, where 23 tons were observed (Table 12). ADF&G surveys in Canoe Bay on May 22, May 29 and June 11 and in Balboa Bay on June 11 also documented the presence of herring. Commercial spotter pilots reported herring in Beaver Bay on May 20, the Shumagin Islands on May 26 and June 5. Most other surveys by ADF&G and commercial pilots were not successful in spotting herring.

By June 10, tender reports placed the Canoe Bay Section catch at 114 tons. The guideline harvest level was 94 tons, and the section was closed (Table 11). Several days later, when fish tickets were tabulated, the catch was actually 77.5 tons and the Canoe Bay Section was reopened on June 29, but no further harvests occurred. After all the fish tickets were tabulated, only the Swedania Point-Balboa Bay Section met the pre-season guideline harvest level with a catch of 19.3 tons.

Intensive aerial surveys to document spawning biomass and locations are not possible due to the large area, weather, muddy water, currently unpredictable appearance of herring, and the later portion of the fishery taking place during the beginning of the June sockeye salmon fishery when personnel are limited. Table 12 lists aerial surveys. In 1991, herring were visible in substantial numbers on two different surveys. There was not much commercial interest in the South Peninsula sac roe fishing in 1991. When commercial pilots surveyed the South Peninsula, poor survey conditions limited their efforts, and only a few 5 to 15 ton schools were observed in Balboa Bay and the Shumagin Islands.

The biomass of 411 tons observed in Canoe Bay on May 22 and the June 11 survey of 379 tons were used to estimate the spawning biomass of 790 tons. In Balboa Bay, on June 11 ADF&G observed 46 tons and the catch of 19.3 tons were used to determine the minimum spawning biomass of 65 tons. Biomass estimates for stocks other than Canoe were not possible. The harvest of 77.5 tons in Canoe Bay represents a 10% exploitation rate of the 790 ton minimum biomass estimate.

Table 11. South Peninsula commercial herring sac roe catch by area, day, and percent roe, 1991 (short tons).

Area	Date	Tons	Roe Percent
Stepovak Bay	May 28	4.2	10.00
	May 30	7.4	11.84
	June 1	2.8	7.70
	June 4	4.1	11.20
	June 9	0.8	9.10
	Total	19.3	10.59
Balboa Bay	May 20	6.8	11.50
	May 23	1.3	12.40
	May 25	2.4	9.20
	May 28	2.8	9.00
	June 5	6.1	13.30
	Total	19.3	11.49
Shumagin Islands	May 16	15.4	7.00
	May 25	5.3	7.50
	May 26	10.6	7.50
	June 5	10.1	11.20
	Total	41.4	8.22
Canoe Bay	May 30	1.8	5.90
	June 7	8.0	8.93
	June 9	64.9	10.06
	June 11	2.8	7.50
	Total	77.5	9.75
Total		157.4	9.66

Table 12. Alaska Department of Fish and Game South Peninsula aerial herring biomass surveys, 1991 (short tons).

Date	Stepovak Bay			Balboa Bay			Beaver Bay			Shumagin Islands			Canoe Bay		
	RAI/a	Tons/b	Rating/c	RAI/a	Tons/b	Rating/c	RAI/a	Tons/b	Rating/c	RAI/a	Tons/b	Rating/c	RAI/a	Tons/b	Rating/c
May 19													9	23	3
May 20	0	0	3					500	/d						
May 21	0	0	3	0	0	3	0	0	3						
May 22													159	411 /e	3
May 23	0	0	3	0	0	3	0	0	3						
May 25	1	2 /e	3	0	0	3	0	0	3						
May 26											15 /d,e				
May 29													12	31	3
June 5					5 /d						15 /d,e				
June 10														250 /d	
June 11				18	46 /e	3	0	0	3				150	379 /e	3
June 29														125 /d	
Total Biomass	2			46			0			30			790		

-Continued-

Table 12. (page 2 of 2)

RAI units express the surface area of herring schools in terms of small schools (surface area equal to 532 square feet). For example, 10 RAI units are equivalent to 10 small herring schools, each with a surface area of 532 square feet.

a/ Relative Abundance Index (RAI): small school (less than 532 square feet) = 1 RAI unit  
medium school (532 square feet to 4,841 square feet) = 5 RAI units  
large school (square feet/532 square feet)

b/ Tons: RAI units are multiplied by 1.52 (schools in water less than 16 feet of depth)  
RAI units are multiplied by 2.58 (schools in water 16 to 26 feet of depth)

c/ Rating of survey: (1) Excellent, (2) Good, (3) Fair, (4) Poor, (5) Unsatisfactory

/d Commercial pilot report.

/e Used in calculating biomass estimate

The Stepovak Bay, Balboa Bay, and Shumagin Islands fisheries were dominated by age 6 and age 7 herring (Table 13, 14, Figure 8). The Canoe Bay fishery was dominated by age 3 and age 6 herring. The amount of age 3 herring in Balboa and Canoe Bays should produce substantial catches of age 4 herring in 1992.

Table 10 lists the South Peninsula herring sac roe average weights and lengths of herring samples by age group. Herring harvested in Stepovak Bay averaged the largest (282 g and 263 mm) and herring harvested in Canoe Bay averaged the smallest (232 g and 244 mm).

No juvenile herring schools nor spawning were observed by ADF&G personnel nor were any reports of the occurrence of juvenile herring or spawning reported by commercial fishermen or pilots in South Peninsula waters.

## FOOD AND BAIT FISHERY

### North Peninsula

There has never been a reported food and bait herring delivery from the North Peninsula area. In 1991, the North Peninsula food and bait fishery season was closed for the season. The reasons for a complete closure were: (1) the exploitation rate of the observed spawning biomass in the Port Moller District was 16% during the sac roe season; (2) no local stocks were reported from other districts; (3) there has never been a documented North Peninsula herring harvest during the food and bait season; and (4) concerns have been expressed about the potential of this fishery harvesting stocks other than those from the North Peninsula during the food and bait season. North Peninsula coastal waters are the likely migration route of spent Togiak and perhaps other Bering Sea stocks from their spawning grounds to summer and fall feeding grounds in the Aleutian Islands.

### South Peninsula

In 1982, the South Peninsula food and bait herring fishery produced 565 tons (Table 4), all of which were taken from the Stepovak Bay Section. The harvest was by one vessel making 11 landings with the aid of four different tenders over a 60 day period. In 1982, 2 or 3 different vessels actively explored throughout the South Peninsula, but only 1 vessel made deliveries during October and November. In 1983, the South Peninsula sac roe fishery was closed and all herring were allocated to a food and bait fishery. Six vessels explored throughout the South Peninsula from late September through mid March but made no deliveries. In 1984, the South Peninsula sac roe season was reestablished. In 1985, the current South Peninsula harvest strategy of allowing 75% of the available harvest to be taken as sac roe with the remaining 25% reserved for a food and bait fishery was established.

To date in 1991, the South Peninsula food and bait herring fishery produced 161.4 tons (Table 4). Two purse seine permit holders made four deliveries to one

Table 13. Estimated age composition of South Peninsula commercial herring sac roe catches by area and percent, 1985-91.

Year	Ages									
	2	3	4	5	6	7	8	9	10	11
Stepovak Bay										
1985	No samples									
1986	No catch									
1987	No catch									
1988	0	5	78	17	0	0	1	0	0	0
1989	0	3	31	50	13	0	0	0	2	0
1990	1	6	8	28	50	7	1	0	1	1
1991 /a	0	4	13	6	23	42	13	0	0	0
Balboa										
1988	0	32	50	9	0	1	3	1	2	3
1989	No samples									
1990	0	4	7	22	59	4	0	4	0	0
1991	0	16	11	16	26	32	0	0	0	0
Shumagin Islands										
1989	0	1	15	79	1	0	0	3	0	2
1990	0	4	0	26	67	2	0	0	0	1
1991	0	0	17	2	30	48	2	0	0	0
Canoe Bay										
1985	0	1	3	81	7	6	1	1	0	1
1986	0	6	0	3	82	6	2	0	1	0
1987	0	25	28	1	5	34	3	3	0	0
1988	0	24	31	20	0	1	16	4	2	1
1989	0	6	56	22	9	0	0	5	1	1
1990	0	23	5	49	17	5	0	0	1	0
1991	0	27	16	1	41	12	2	0	1	0
Pavlof Bay										
1985	No samples									
1986	No samples									
1987	0	6	18	5	11	48	9	2	1	0
1988	0	34	50	5	0	2	7	0	2	0
1989	No samples									
1990	No catch									
1991	No catch									
Leonard Harbor										
1986	0	3	0	3	83	7	4	0	0	0
1987	0	67	5	0	3	25	0	0	0	0
1988	No samples									
1989	No samples									
1990	0	3	2	35	46	6	0	3	6	0
1991	No catch									

/a 1991 Stepovak Bay catch was in the Northeastern portion of the bay.

Table 14. Estimated age composition of South Peninsula commercial herring sac roe purse seine catches by area and day, 1991.

Date	Sample Size	Ages									
		2	3	4	5	6	7	8	9	10	11
Stepovak Bay /a											
June 9	53	0.0	3.8	13.2	5.7	22.6	41.5	13.2	0.0	0.0	0.0
Total	53	0.0	3.8	13.2	5.7	22.6	41.5	13.2	0.0	0.0	0.0
Balboa Bay											
May 28	19	0.0	15.8	10.5	15.8	26.3	31.6	0.0	0.0	0.0	0.0
Total	19	0.0	15.8	10.5	15.8	26.3	31.6	0.0	0.0	0.0	0.0
Shumagin Islands											
May 16	46	0.0	0.0	17.4	2.2	30.4	47.8	2.2	0.0	0.0	0.0
Total	46	0.0	0.0	17.4	2.2	30.4	47.8	2.2	0.0	0.0	0.0
Canoe Bay											
May 29	113	0.9	47.8	36.3	1.8	5.3	7.1	0.9	0.0	0.0	0.0
June 4	48	0.0	29.2	2.1	0.0	45.8	20.8	0.0	0.0	2.1	0.0
June 6	80	0.0	21.3	11.3	1.3	51.3	12.5	1.3	0.0	1.3	0.0
June 8	51	0.0	2.0	5.9	2.0	78.4	5.9	3.9	0.0	2.0	0.0
June 10	51	0.0	9.8	2.0	0.0	62.7	19.6	3.9	0.0	0.0	2.0
Total	343	0.3	26.5	16.0	1.2	41.1	12.0	1.7	0.0	0.9	0.3

/a 1991 Stepovak Bay catch was in the Northeastern portion of the bay.

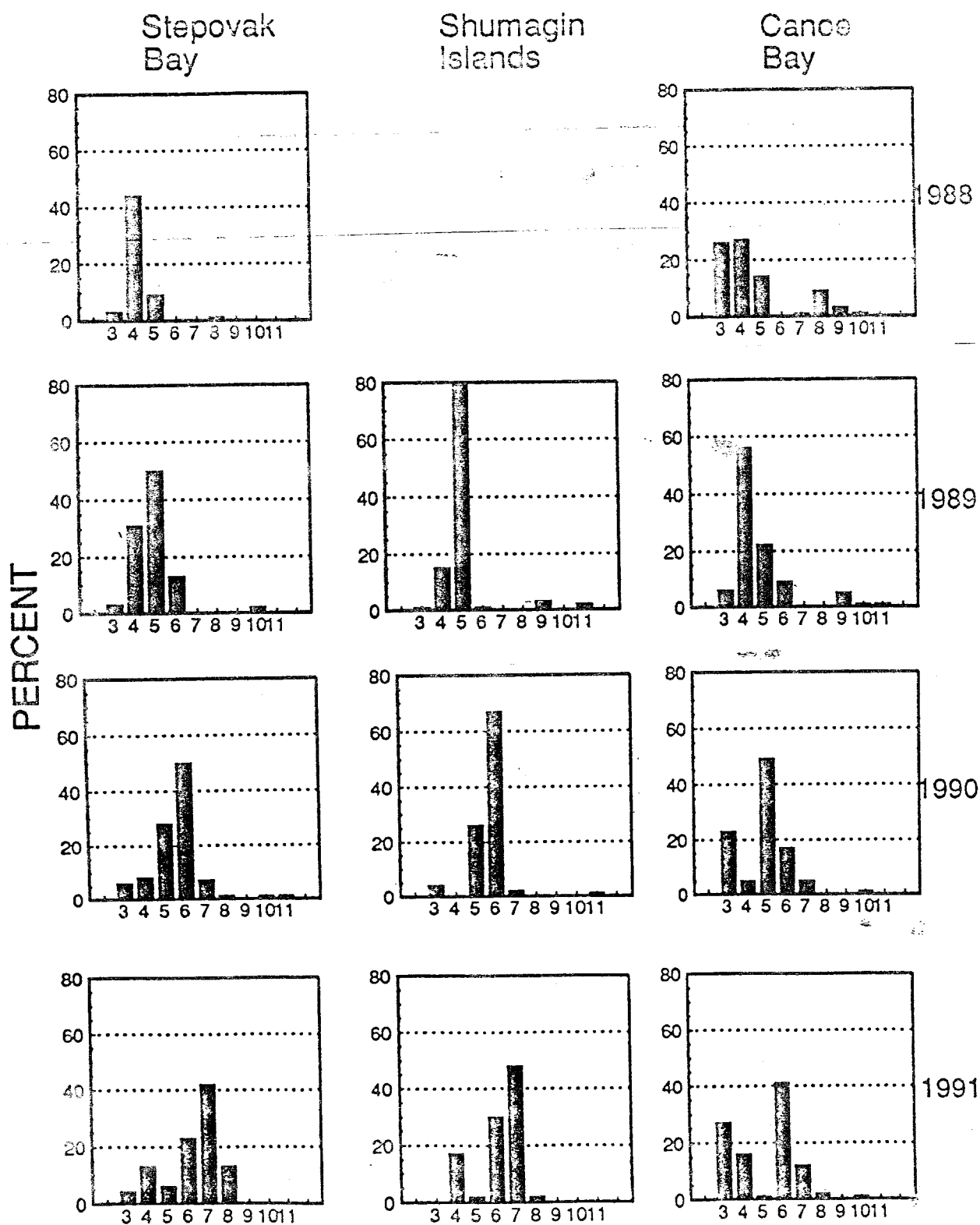


Figure 8. Age distribution of annual herring sac roe catches from Stepovak Bay, Shumagin Islands, and Canoe Bay, 1988-91.



company that purchased herring during the food and bait season. All of the herring were harvested from the General Section of the King Cove District.

Table 10 lists the South Peninsula herring food and bait average weights and lengths of herring samples by age group. The herring averaged 192 g and 240 mm in length (Figure 9). Most of the Otter Cove herring were age 4 (87.2%, Table 15).

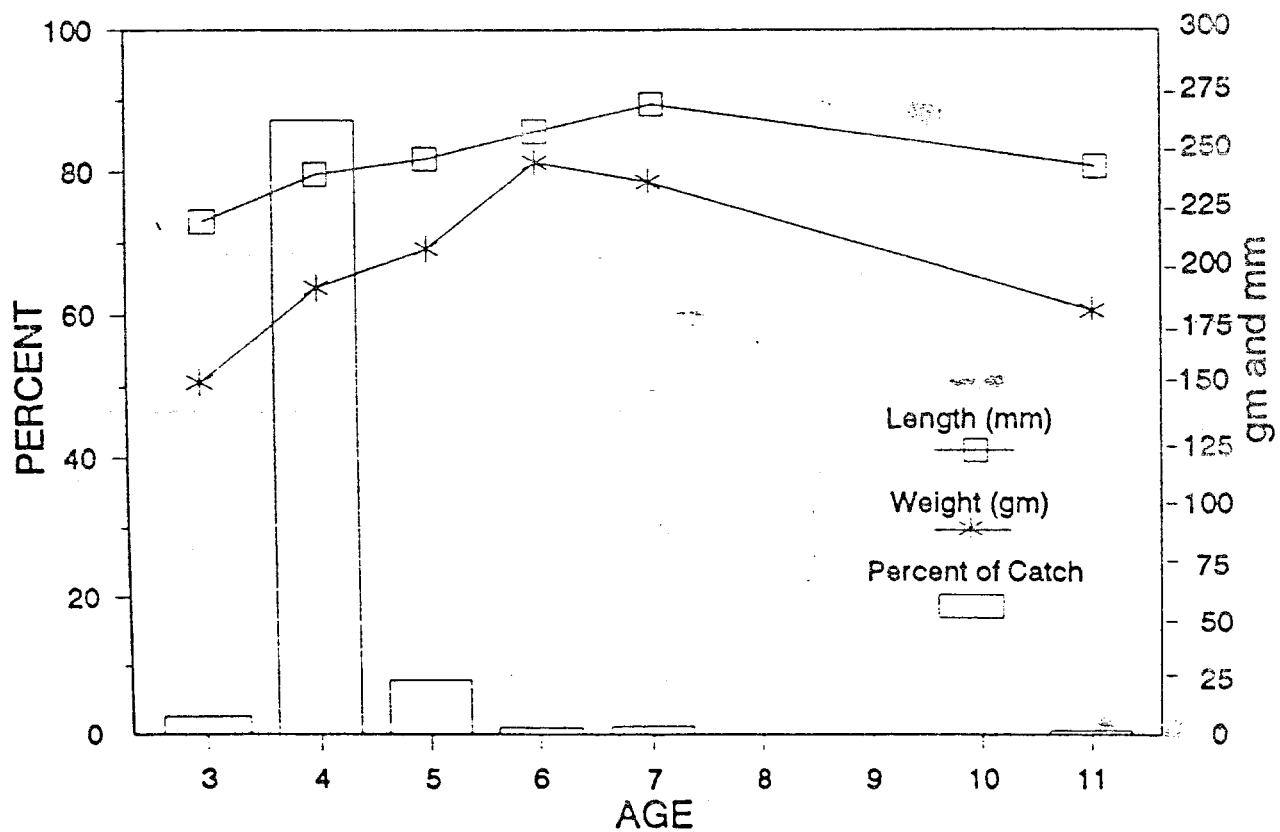


Figure 9. Length (mm), weight (gm), and age distribution of annual commercial herring food and bait catches from the South Peninsula, 1991.

Table 15. Estimated age composition of South Peninsula commercial herring food and bait catches by area and percent, 1991.

Date	Sample	Ages								
	Size	3	4	5	6	7	8	9	10	11
King Cove District										
August 19	351	2.6	87.2	7.7	0.9	1.1	0.0	0.0	0.0	0.6

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EASTERN ALEUTIAN ISLANDS "DUTCH HARBOR"

FOOD AND BAIT HERRING FISHERY, 1991

REPORT TO THE BOARD OF FISHERIES

By

James N. McCullough

and

Michael L. Ward

Regional Information Report<sup>1</sup> No. 4K92-3

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Division of Commercial Fisheries  
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Mark Stopha the Alaska Peninsula Assistant Area Management Biologist collected and recorded data. Seasonal employees Chris Sundby, Ralph Andrew, and Judy Hamik collected and recorded data. Joshua Jakeway collected herring samples in Akutan. Trident Seafoods in Akutan and Westward Seafoods, Alyeska Seafoods, and Universal Seafoods in Dutch Harbor provided catch samples. Joanne Brodie aged samples and produced Lotus files. Judy Hamik entered fish tickets into the state fish ticket data base. Marilyn Barr typed most of the report. Pete Probasco provided supervisory support and editorial assistance.

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# ABSTRACT

During the spring of 1991 the Alaska Board of Fisheries changed the opening of the Dutch Harbor food and bait herring fishery from August 15 to July 16. Nine hundred thirty-one tons of herring was allocated to this fishery in 1991. Short openings were scheduled to manage the fishery conservatively. Eight seiners and eleven tenders registered. Weather precluded fishing during the first opening on July 16. The fishery reopened on July 17 at 12:01 AM and was closed at 6:38 AM with a catch of 1,325 tons. Five processors purchased herring for \$300 per ton. The ex-vessel value of the fishery was about \$397,500. Twenty-four percent of the catch was processed for food and 76 percent for bait.

Key words: Aleutian Islands, herring, catch, food, bait

## INTRODUCTION

The Eastern Aleutian Islands herring food and bait fishery occurs near Unalaska and Akutan Islands, primarily in the vicinity of Unalaska and Akutan Bays (Figure 1). By regulation, the Bering Sea Herring Fishery Management Plan (5 AAC 27.060) applies to the Unimak, Akutan, and Unalaska Districts, and the Umnak District east of Samalga Pass (ADF&G 1991). This management plan has been in effect since 1983. Historically, the Dutch Harbor Food and Bait fishery occurred from 1929 through 1938 and 1945 (Table 1).

Historically, the fishery was a mixture of gill net and seine gear, holding pounds, and numerous small, shore-based hand packing operations. A large portion of the catch was brined for either food or bait purposes; some product was frozen. Seine gear provided the bulk of the herring harvest. Currently, fishing gear consists of purse seine vessels, which use large seines, up to 250 fathoms long and 25 to 35 fathoms deep. The entire 1981-86 and 1990 harvest was caught with purse seine gear. One gill net permit holder participated in the 1987 and 1988 seasons, and two gill net permit holders fished in 1989. Gill net vessels used in the fishery are typically 32 feet long, and there is no restriction on gear length. Purse seine vessels used in the fishery average about 50 feet in keel length and the majority also participate in the area M salmon fishery. Fish finding electronics (sonar) aboard these vessels are critical to the fishing operation, much as the airplane is critical to the sac roe fishery. Generally, during the season, the permit holders freely exchange information.

When herring concentrations leave traditional fishing areas, fishermen will increase their efficiency by conducting organized "sonar searches" over fairly large areas until concentrations of herring are located. When catcher vessels leave the immediate area of shore-based processing facilities, the industry follows with floating processors and tenders. Processing efficiency and product quality may decline when this occurs. Harvest locations have extended over approximately 90 miles, from Tigalda Island to Makushin Bay (Figure 1). The majority of the harvest, however, has occurred within a five mile radius of shore-based processing facilities in Unalaska and Akutan Bays.

One similarity between the current and historical fisheries is the quality problem associated with feeding herring. Feed problems were overcome in the historical fishery by the use of holding pounds, where seine caught herring were held until their stomachs became empty. Gill net caught herring required special handling to prevent spoilage. In the current fishery, the use of shaved ice and super-chilled seawater in conjunction with rapid processing alleviates most of the feed related problems. When feeding conditions are severe, the processors have suspended buying.

One difference between the current and historical (1929-38 and 1945) fisheries are the availability of herring. Historically, herring were categorized into an early summer run (late June to late July) and a late summer run (late August to early September). This pattern does not seem to apply in the current (post 1980) fishery. Herring now appear in the Dutch Harbor area about July 1 and are available throughout the summer through mid-September.

Shore-based processors purchase the majority of the herring harvested. Floating processors have been used each year; however, they are limited by daily handling

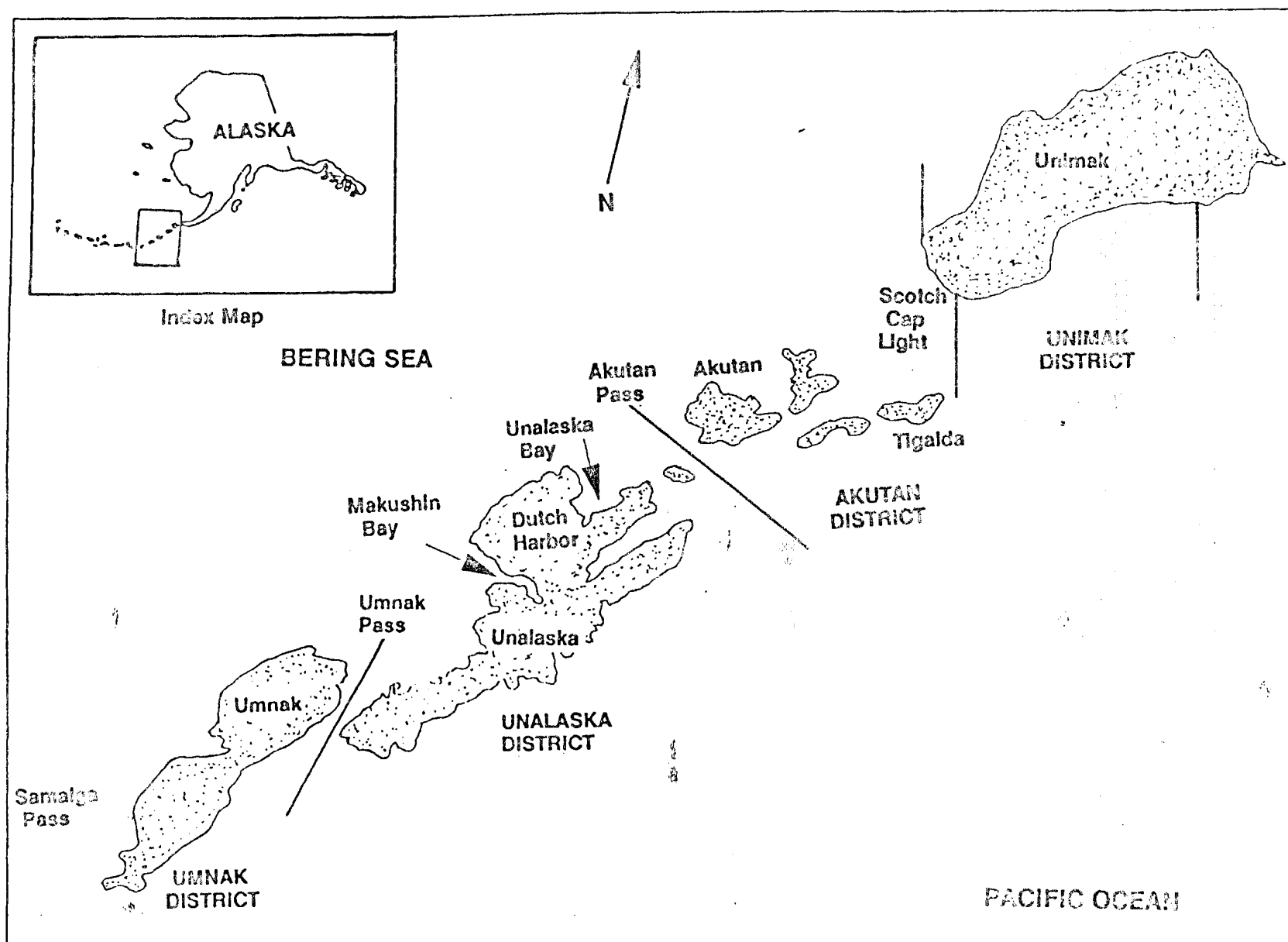


Figure 1. Map of the Eastern Aleutian Islands, the study area includes the Unimak, Akutan, and Unalaska Districts and that portion of the Umnak District east of Samalga Pass.

Table 1. Eastern Aleutian Islands "Dutch Harbor" area herring food and bait fisheries historical industry summary, 1929-91.

Year	Harvest In Short Tons	No. Processors	No. Permits	No. Landings	Tons Per Boat	Tons Per Landing	\$ Per Ton	\$ Value (Millions)	\$ Per Vessel (Millions)
1929	1,259	*	*	*	*	*	*	*	*
1930	1,916	*	*	*	*	*	*	*	*
1931	1,056	12	26	*	*	*	*	*	*
1932	2,510	12	30	*	*	*	*	*	*
1933	1,585	12	38	*	*	*	*	*	*
1934	1,533	9	*	*	*	*	*	*	*
1935	2,412	10	*	*	*	*	*	*	*
1936	1,379	8	*	*	*	*	*	*	*
1937	579	*	*	*	*	*	*	*	*
1938	513	*	*	*	*	*	*	*	*
1939-44					NO FISHERY				
1945	75	*	*	*	*	*	*	*	*
1946-80					NO FISHERY				
1981	704	*	*	16	352	44	300	0.211	0.11
1982	3,565	6	7	95	509	38	300	1.020	0.15
1983	3,567	5	8	96	446	37	232	0.828	0.10
1984	3,578	5	9	61	398	59	210	0.751	0.08
1985	3,480	3	6	78	560	45	162	0.564	0.09
1986	2,394	4	7	53	342	45	254	0.600	0.09
1987	2,503	4	8 <sup>0</sup>	45	373	56	300	0.751	0.09
1988	2,004	6	8 <sup>0</sup>	59	251	34	252	0.505	0.06
1989	3,081	5	9 <sup>0</sup>	69	342	45	283	0.873	0.10
1990	820	5	7	8	117	103	350	0.287	0.04
1991	1,325	5	8	18	166	74	300	0.398	0.05
1929-38									
Average	1,474	11	31	*	*	*	*	*	*
1982-91									
Average	2,632	5	8	58	350	54	264	0.658	0.09

-Continued-

Table 1. (page 2 of 2)

Data not available.

<sup>a</sup>The number of processors, fishing vessels, and catch by gear type can not be released due to state confidentiality requirements.

<sup>b</sup>The catch by gear type can not be released due to state confidentiality requirements.

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51

capacities, which are considerably less than that of the shore-based plants. All of the processors associated with the herring fishery have floating processors and are diversified into groundfish, salmon, halibut, black cod, scallops, and the Bering Sea and Alaska Peninsula crab fisheries. In 1988 and 1990, some herring were tendered to the King Cove shore plant, in 1989 and 1990 to the Sand Point shore plant, and in 1988-90 to the Akutan shore plant.

Generally, the ex-vessel value for bait herring has exceeded that for food herring (Table 1). Industry information indicates that foreign food markets currently have multiple sources of herring from European and Canadian stocks which have been cycling high in recent years. While Eastern Aleutian food herring are a suitable and desirable product, an ample and more reliable supply of food herring from other countries currently dominates the market. The bait product from this fishery has a more stable market which is used locally and in other Alaskan fishing ports for the longline and crab fisheries. Bait demands have been increasing in recent years and a premium price is placed on quality bait which is fresh and has high oil content. Overall, the ex-vessel value of bait herring has remained more stable than that for food.

The harvest strategy of the Dutch Harbor food and bait herring fishery has evolved since it was re-established in 1981 (Table 2). During the 1981 and 1982 seasons, there were no harvest restrictions. From 1983 to 1985 the Board of Fisheries implemented a harvest ceiling of 3,527 tons per year due to biological concern over multiple exploitation on Eastern Bering Sea spawning stocks, specifically the Bristol Bay, Nelson Island, and Port Moller stocks. Scale pattern analysis studies identified these stocks as comprising the Eastern Aleutian herring biomass (Rogers and Schnepf 1985). The extensive sac roe fisheries occurring on these stocks coupled with the Dutch Harbor food and bait fishery which may harvest some of these stocks, may create biological concern and possible exploitation above the board's 20% guideline policy. In 1986, a modification of the harvest ceiling was implemented by the Alaska Department of Fish and Game (ADF&G) in response to the Board of Fisheries concern for the possible diminishing nature (lack of recruitment in the spawning stocks) of the contributing stocks (primarily Togiak, to which the bulk of the Eastern Aleutian catch is estimated to be comprised). The 1986 harvest allocation in the Eastern Aleutians was reduced by 30% (2,453 ton limit). This reduction was commensurate with the percent reduction of the observed Togiak spawning biomass between the springs of 1985 and 1986. The 1987 harvest allocation was 2,332 tons, which was in line with the 1985 to 1987 reduction of observed Togiak spawning biomass.

In 1988, the Alaska Board of Fisheries implemented the Bering Sea Herring Fisheries Management Plan, which established criteria for calculating the Dutch Harbor food and bait quota. To ensure the conservation of herring stocks, the board adopted a requirement that the overall exploitation of a herring stock should not exceed 20% of the spawning biomass. In the case of the Togiak spawning stock, an allocation between the sac roe fishery, spawn on kelp fishery, and the Dutch Harbor food and bait fishery was established so that the catch did not exceed 20% of the observed spawning biomass. The number of fishermen involved and the value of the fishery were factors considered by the Board when it made the allocations.

The Bering Sea Herring Fishery Management Plan in effect during the 1991 season defines under what conditions and to what extent there will be a Dutch Harbor food and bait fishery.

Table 2. Dutch Harbor commercial herring food and bait catch, in short tons, 1981-91.

Year	<u>Landing Date</u>		Days	Preseason Togiak Spawning Biomass	Harvest Quota	Food and Bait Harvest	% Togiak Spawning Biomass Harvested	Number Permit Holders Fishing
	First	Last	Fished					
1981	8/03	8/23	21	159,000	NONE	704	0.4	- <sup>a</sup>
1982	8/05	9/12	39	98,000	NONE	3,565	3.6	6
1983	7/23	9/06	46	142,000	3,525 <sup>b</sup>	3,567	2.5	5
1984	7/17	7/27	11	115,000	3,525 <sup>b</sup>	3,578	3.1	5
1985	7/17	8/11	26	132,000	3,525 <sup>b</sup>	3,480	2.6	3
1986	7/16	7/28	13	96,000	2,453 <sup>c</sup>	2,394	2.5	4
1987	7/16	7/23	4 <sup>d</sup>	88,000	2,332 <sup>e</sup>	2,503 <sup>f</sup>	2.8	9
1988	7/16	9/18	21	132,000	3,100 <sup>g</sup>	2,004	1.6	8
1989	7/16	8/05	19 <sup>h</sup>	100,108	3,100 <sup>g</sup>	3,081	3.2	9
1990	8/15	8/15	<1	72,000	903 <sup>g</sup>	820	1.1	7
1991	7/17 <sup>o</sup>	7/17	<1	83,229	931 <sup>g</sup>	1,325	1.6	8
Average			18	110,667	2,614	2,456	2.2	6

<sup>a</sup>Number can not be released due to state confidentiality requirements.

<sup>b</sup>Harvest ceiling of 3,525 established by Board of Fisheries.

<sup>c</sup>Harvest quota set by ADF&G. Reduced proportionate with the drop from the 1985 Togiak spawning biomass level.

<sup>d</sup>Closed 7/19, reopened for 14 hours on 7/23.

<sup>e</sup>Harvest quota set under provisions of the Bering Sea Herring Fisheries Management Plan.

<sup>f</sup>Closed 7/26, reopened 7/27 through 8/5.

<sup>g</sup>Fishery opened for six hours on 7/16; weather prevented any fishing effort.

The elements governing the food and bait fishery are listed below:

1. The Dutch Harbor food and bait fishery quota is determined through the following calculations:
  - A. An exploitation rate of 20% is applied to the estimated Togiak herring spawning biomass. This figure represents the total combined allowable harvest to be extracted by the Togiak sac roe fishery, spawn on kelp fishery, and the Dutch Harbor food and bait fishery.
  - B. The spawn on kelp fishery is allocated 1,500 tons of herring.
  - C. The Dutch Harbor fishery is allocated 7% of the remaining allowable harvest (after the 1,500 ton spawn on kelp allocation has been subtracted from the total allowable harvest).
  - D. The Togiak herring sac roe harvest allocation is the remainder of the total allowable harvest after the spawn on kelp and Dutch Harbor allocation have been subtracted.
2. When any Bering Sea herring stock from Port Clarence to Port Moller is below its threshold the Dutch Harbor food and bait fishery will be closed for that season. The threshold levels in short tons are as follows:

Port Moller	1,000
Togiak	35,000
Security Cove	1,200
Goodnews Bay	1,200
Cape Avinof	500
Nelson Island	2,000
Nunivak Island	1,500
Cape Romanzof	1,500
Norton Sound	7,000

This formula results in an allocation of herring to the Dutch Harbor food and bait fishery equivalent to approximately one percent (1.1-1.3%) of the estimated Togiak herring spawning biomass.

Alaska Board of Fisheries action in March, 1991 changed the Dutch Harbor food and bait herring fishery opening date from August 15 to July 16. This change was implemented to lessen the chance of catching other than Togiak and Port Moller herring stocks in the Dutch Harbor fishery.

Interest by the Peninsula Marketing Association in the possibility of a local herring spawning stock harvested in the Dutch Harbor food and bait fishery resulted in an agreement between ADF&G and the Association. ADF&G agreed to sample herring caught in the fishery for age, weight, length, and maturity. The Association agreed to pay \$7,000 to ADF&G for this sampling.

This report documents historical catches and the number, age, sex, and size composition of the 1991 herring food and bait harvest in the Dutch Harbor fishery. This data will provide a base for management considerations.



## METHODS

Commercial catch data were compiled by the Division of Commercial Fisheries of the Alaska Department of Fish and Game (ADF&G). These data were based on computer tabulations originating from individual sale receipts (fish tickets) given to fishermen at the time of delivery. Fish tickets and the computer generated summaries were edited by ADF&G Alaska Peninsula staff for errors and omissions. Because extensive fish ticket editing is usually required to finalize the data for any given year, later reports may contain minor differences in the catch information listed in this report.

Catches were sampled during the one day fishery at Akutan and Dutch Harbor. The sampling plan specified 600 herring to be sampled per fishing period with at least 100 herring to be sampled from each tender. For single sampling events, a 600-fish sample was chosen to provide 95% simultaneous confidence levels for age composition within  $\pm 5\%$  of the true age composition (Thompson 1987). Herring were randomly sampled, usually collected from the holds of tender vessels to minimize scale loss. The harvest area of each tender sampled was determined through vessel operator interviews and fish ticket information.

Age compositions were computed for the catch. Age was determined by examining scales (Warner and Shafford 1970). Scales were taken from the preferred area, which was located on the left side of the herring three rows below the lateral line and three scales posterior to the center of the operculum plate (Anonymous 1986). One scale was taken from each herring. Ages were recorded in actual fish age in years. The accuracy of age determination was not tested.

Standard length measurements were taken from the anterior most portion of the fish, including the lower jaw with the mouth closed, to the end of the vertebra (hypural plate) using a meter stick with 1 mm gradations and reading the measuring device to within 1 mm. While not tested, accuracy of a length measurement was probably  $\pm 5$  mm. Mean lengths were calculated from an unweighted composite of the data collected from each area sampled.

Individual fish weight measurements were recorded to the nearest 2 g using a digital scale with 2 g gradations. While not tested, accuracy of a weight measurement was probably within  $\pm 2$  g. Mean weights were calculated from an unweighted composite of the data collected from each area sampled.

Sex compositions and sexual maturity were determined for each sample. Sex and sexual maturity was determined by internal observation of the gonads. Sexual maturity of herring were classified as: (1) virgin herring, (2) virgin herring with small sexual organs, (3) gonads occupying about half the ventral cavity, (4) gonads almost as long as body cavity, (5) gonads fill body cavity, (6) ripe gonads, (7) spent herring, and (8) recovering spent herring.

## 1991 FISHERY

A 931 ton quota was allocated for the Dutch Harbor food and bait harvest using the Bering Sea Herring Management Plan allocation formula, as follows:

1991 Togiak Spawning Biomass	74,000 Tons
@ 20% Maximum Exploitation	
-----	
Total Allowable Catch	14,800 Tons
-----	
Togiak Spawn on Kelp Allocation	- 1,500 Tons
-----	
Remainder of Allowable Catch	13,300 Tons
Dutch Harbor Allocation	7%
-----	
Dutch Harbor Quota	931 Tons

Eight seiners and 11 tenders with a combined capacity of 1,600 tons registered for the fishery. During the week prior to the opening, large schools of herring were seen in shallow bays causing concern over the potential for overharvest. Short openings were scheduled to keep the fishery under control (McCullough 1991). Codes were given to all tenders with instructions to report landings immediately. Seiners were instructed to monitor their radios.

The fishery opened on July 16 at 2:00 AM and closed at 8:00 AM. No fishing occurred due to bad weather. The next opening was July 17 at 12:01 AM. One permit holder, using a spotter plane, found a large school of herring in Summer Bay (Figure 2). The rest of the permit holders began fishing the area between Eider Point and Broad Bay. Initially small sets were made, then six permit holders moved to Summer Bay, while one permit holder remained at Eider Point. Large sets were quickly made in the shallow waters (4-8 fathoms) of Summer Bay.

Initial radio reports were slow coming in and inaccurate. At 6:38 AM the closure was announced with a reported catch of 870 tons on board and one set still in the water.

The entire catch of 1,325 tons was taken with purse seine gear. Three hundred eighteen tons (24%) were processed for food and 1,007 tons (76%) were processed for bait. Five processing companies from Dutch Harbor, Akutan, and King Cove purchased herring for \$300 per ton. In 1991, 58% of the herring were processed in Dutch Harbor. The ex-vessel value of the fishery was \$397,500. The 1991 retail price for bait herring was \$900 per ton. Table 2 presents the harvest dates by year.

The 1991 Togiak herring spawning biomass was revised to an estimated 83,229 tons. This revision was done by ADF&G Staff in Anchorage after the Dutch Harbor fishery closed. This revision is a post-season assessment determined through analysis of fish tickets, survey data, and age composition data from the various Togiak herring fisheries and spawning population.

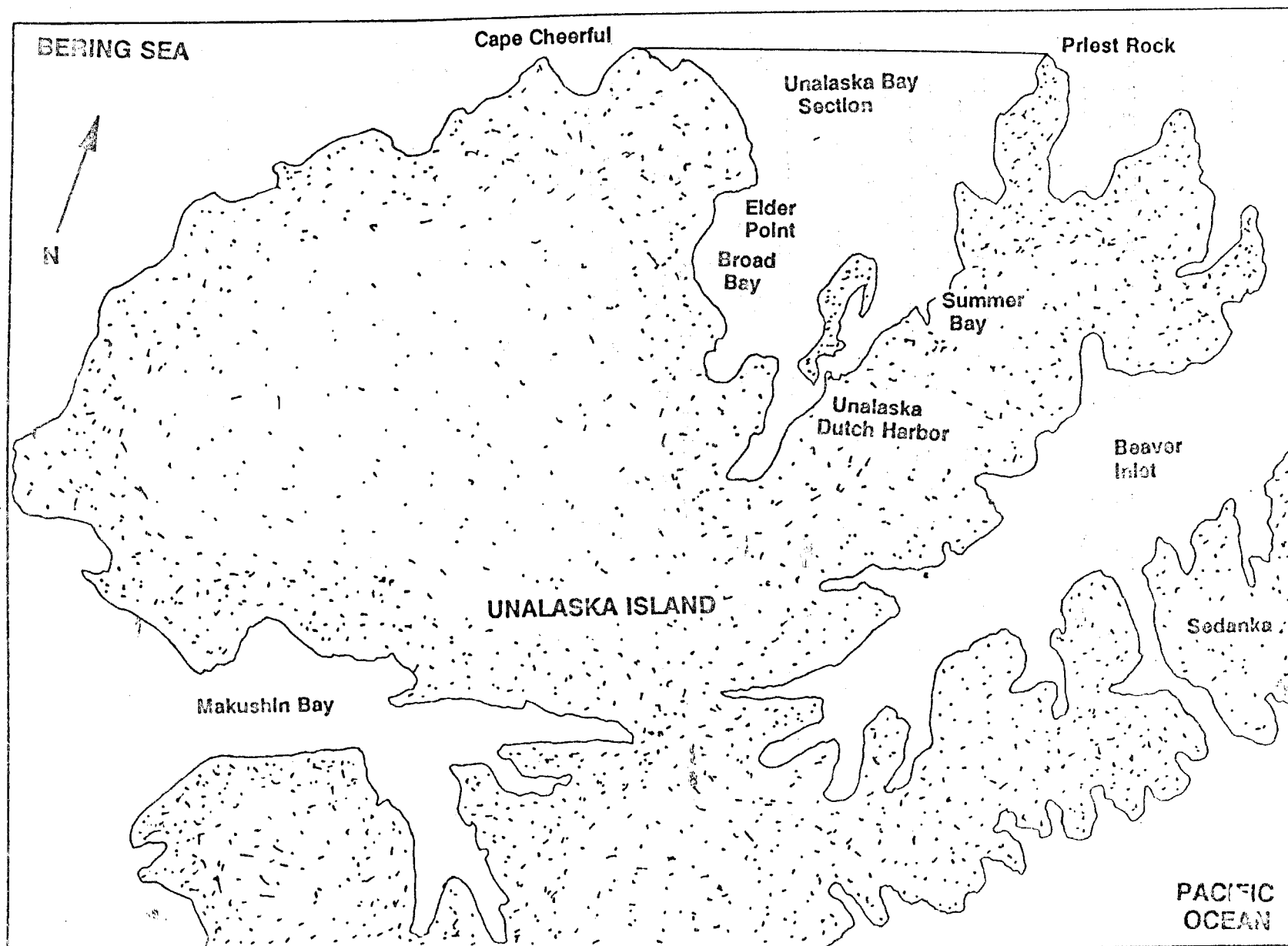


Figure 2. Map of Northern Unalaska Island with Unalaska Bay shown.

## SAMPLE RESULTS

Five hundred and sixty-two herring were collected on July 17, 1991 and sent to Kodiak for analysis. The results are presented in Table 3. Seventy-four percent of the herring sampled were 10 years old or older and no strong year classes appear to be recruiting into the population. Table 4 compares the Bering Sea herring spawning stocks by age with herring caught in the Dutch Harbor food and bait fishery. No conclusive stock composition results are apparent based on age data from the Dutch Harbor fishery in comparison to the age composition of other Bering Sea herring spawning stocks. Samples used for aging in sac roe and food and bait fisheries are usually obtained from the commercial catch or from test fishing. The Dutch Harbor samples are assumed to be representative of the catch but may not be representative of the population. Samples from some Bering Sea spawning stocks where ADF&G had extensive sampling projects are assumed to be representative of the population.

The average size of the herring caught in the Dutch Harbor food and bait fishery was 471 grams (1 pound). This is substantially larger than the largest herring spawning stock sampled in the Bering Sea in 1991 which averaged 364 grams. Comparing the weight at age data of herring harvested in the Dutch Harbor fishery with sac roe stocks also does not result in any conclusive stock composition comparisons.

One controversy concerning the Dutch Harbor food and bait herring fishery was the possibility that some herring may spawn later in the summer after the fishery in Aleutian Islands waters. Table 3 lists the gonad maturity of the samples by age. All herring sampled had spawned earlier in the year, were recovering from spawning, and would not spawn again until the following year (i.e. 1992).

Several stock separation studies have indicated that the origins of the herring caught in this fishery are predominantly from the Togiak stock, averaging 78% Togiak over all studies (Funk 1991). The composition of the non-Togiak component of the harvest was not identifiable as to origin. Possible contributing stocks include: Norton Sound, Cape Romanzof, Nunivak Island, Nelson Island, Cape Avinof, Goodnews Bay, Security Cove, and Port Moller.

Based on migration timing, the mid-July opening date at Dutch Harbor should avoid Nelson Island herring and should restrict the fishery to Port Moller and Togiak stocks.

Table 3. Estimated age, sex, weight, length, and maturity of herring harvested in the Dutch Harbor commercial herring food and bait fishery, July 17, 1991.

Age Years	Sample			Catch			Weight			Length			Maturity	
	N	Male	Female	(%)	(%)	(%) of	N	Mean	STD	N	Mean	STD	Number Spent	Number Ripe
				Male	Female	Total		(g)	(g)		(mm)	(mm)		
1														
2														
3														
4	1	0	1	0.0	100.0	0.2	1	211	0.0	1	239	0.0	1	0
5	1	0	1	0.0	100.0	0.2	0			1	262	0.0	1	0
6	1	0	1	0.0	100.0	0.2	1	371	0.0	1	298	0.0	1	0
7	44	21	23	47.7	52.3	8.7	29	352	35.4	44	277	7.6	44	0
8	56	26	30	46.4	53.6	11.0	36	384	42.1	56	286	9.1	56	0
9	29	9	20	31.0	69.0	5.7	20	436	44.9	29	295	9.7	29	0
10	68	26	42	38.2	61.8	13.4	39	466	46.4	68	302	7.7	68	0
11	57	24	33	42.1	57.9	11.2	44	490	56.9	57	305	10.0	57	0
12	112	44	68	39.3	60.7	22.1	76	502	43.4	112	310	8.9	112	0
13	87	37	50	42.5	57.5	17.2	57	526	47.5	87	311	8.1	87	0
14	45	14	31	31.1	68.9	8.9	20	529	53.0	45	315	10.0	45	0
15	5	1	4	20.0	80.0	1.0	4	544	24.6	5	323	7.3	5	0
16	0	0	0	0.0	0.0	0.0	0			0			0	0
17	1	0	1	0.0	100.0	0.2	1	469	0.0	1	319	0.0	1	0
Total	507	202	305			100.0	328	471		507	303		507	0
Sex Composition of Aged Herring														
		39.8	60.2											

613-  
614-  
615-

Table 4. Age comparison of Dutch Harbor commercial herring food and bait samples and other Bering Sea herring spawning stocks, in percent by age class, 1991.

Sampling Sites	Sample Size	Ages										
		3	4	5	6	7	8	9	10	11	12	13
Norton Sound	4,572	1.2	1.6	11.9	3.0	10.5	15.2	28.9	13.3	6.7	4.8	2.1 <sup>a</sup>
Cape Romanzof	1,889	0.1	2.6	3.5	2.8	29.3	14.3	15.1	13.1	7.5	6.6	4.9 <sup>a</sup>
Nunivak Island	714	0.0	9.5	1.6	1.0	6.8	12.8	8.6	14.8	11.9	19.0	13.9 <sup>a</sup>
Nelson Island	1,512	1.9	13.5	4.1	3.1	20.6	16.0	5.4	9.5	7.6	10.1	8.2 <sup>a</sup>
Cape Avinof	1,613	2.3	15.7	10.7	4.9	19.3	14.5	10.0	6.6	6.6	5.8	3.6 <sup>a</sup>
Goodnews Bay	1,875	1.3	22.2	3.9	3.5	20.1	13.2	5.1	8.7	7.6	9.1	5.0 <sup>a</sup>
Security Cove	1,245	0.3	31.7	3.4	2.5	15.8	16.6	5.2	9.2	6.7	5.8	2.8 <sup>a</sup>
Togiak	5,029	0.0	16.2	1.5	1.6	18.4	18.2	5.0	10.2	4.7	9.0	15.2 <sup>a</sup>
Inner Port Moller	87	1.1	58.6	12.6	2.3	16.1	1.1	4.6	2.3	1.1 <sup>b</sup>		
Outer Port Moller	680	2.9 <sup>c</sup>	74.3	6.0	1.2	10.9	2.4	1.3	0.6	0.4 <sup>b</sup>		
Herendeen Bay	550	2.0	71.5	5.3	1.6	11.1	3.8	0.4	1.8	2.5 <sup>b</sup>		
Bear Island	173	1.7	85.5	8.1	0.0	3.5	0.6	0.0	0.0	0.6 <sup>b</sup>		
Deer Island	284	0.7	64.8	7.4	2.5	17.6	4.9	0.0	1.4	0.7 <sup>b</sup>		
Cape Kutuzof	68	0.0	36.8	10.3	0.0	39.7	8.8	1.5	1.5	1.5 <sup>b</sup>		
Dutch Harbor	507	0.0	0.2	0.2	0.2	8.7	11.2	5.7	13.4	11.2	22.0	27.2 <sup>a</sup>

-Continued-

Table 4. (page 2 of 2)

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<sup>a</sup>Percent of sample 13 years or older.

<sup>b</sup>Percent of sample 11 years or older.

<sup>c</sup>Sample also contained 0.1% of age 2 herring.

## HARVEST PROJECTION FOR THE 1992 FISHERY

The estimated quota for the 1992 Dutch Harbor food and bait herring fishery is 738 tons (K.A. Rowell, Alaska Department of Fish and Game, Anchorage, personal communication). This number is derived using the Bering Sea Herring Management Plan (5 AAC 27.060) and the projected 1992 Togiak herring spawning biomass of 60,214 tons (Skrade and Brockover 1991). The actual quota will be established when the 1992 Togiak herring spawning biomass is determined.

## RECOMMENDATIONS

The fast pace of the 1991 Dutch Harbor food and bait herring fishery in conjunction with the small projected 1992 quota (738 tons) and the likelihood of available tenders with a total capacity of more than double the quota, makes it obvious that the fishery needs to be slowed down. In consideration of this, the following management strategies will be implemented in 1992.

1. Fishing restricted to daylight hours.
2. Fishing periods of two hours or less.



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## PARTIAL LISTING OF HERRING REGULATIONS, 1991

### ARTICLE 27 - GENERAL SPECIFICATIONS.

#### 5 AAC 27.060. BERING SEA HERRING FISHERY MANAGEMENT PLAN.

- (a) The department shall follow the directives of the Bering Sea Herring Management Plan, as well as the regulations that govern the individual herring fisheries, when managing the commercial herring fisheries that take place in the Bering Sea.
- (b) Unless otherwise specified in this chapter, the department shall manage the fisheries so that the exploitation rate on eastern Bering Sea herring stocks does not exceed 20 percent of the biomass of those stocks.
- (c) The following thresholds are minimum biomass levels for each herring fishing district. When the department estimates, in season, that the biomass in a district is below its threshold, the department may not allow a commercial harvest of herring in that district.

District	Thresholds (s.t.)
Port Moller	1,000
Togiak	35,000
Security Cove	1,200
Goodnews Bay	1,200
Cape Avinof	500
Nelson Island	2,500
Nunivak Island	1,500
Cape Romanzof	1,500
Norton Sound	7,000

- (d) The department shall manage the herring food and bait fishery that takes place in the Unimak, Akutan, and Unalaska Districts and that portion of the Umnak District east of Samalga Pass (Dutch Harbor fishery) so that it is allocated seven percent of the allowable Togiak District herring sac roe harvest determined under the provisions of the Bristol Bay Herring Management Plan (5 AAC 27.865).
- (g) When the Togiak District is below its threshold, the Dutch Harbor fishery will be closed for that season.
- (h) When any of the southwest Alaska herring stocks, from Security Cove to Port Clarence, identified in (c) of this section, is below its threshold, the Dutch harbor food and bait fishery will be closed for that season; for the purposes of determining the need for a closure of the Dutch Harbor food and bait fishery the threshold level for the Nelson Island herring stock will be 2,000 short tons; if it becomes necessary to close the Dutch Harbor food and bait herring fishery under this section, the herring harvest allocated for the Dutch Harbor food and bait herring fishery, in 5 AAC 27.865 (7), will not be reallocated to the Togiak sac roe herring fishery.

ARTICLE 12. - STATISTICAL AREA T; BRISTOL BAY AREA

5 AAC 27.865. BRISTOL BAY HERRING MANAGEMENT PLAN.

- (a) When managing the Bristol Bay commercial herring fishery, the primary objectives of the department will be to prosecute an orderly and manageable fishery, while striving for the highest level of product quality with a minimum of waste.
- (b) To ensure that no gear group is totally disadvantaged, the Board of Fisheries directs the department to take the following actions given the specified circumstances.
  - (1) When circumstances preclude the department from adequately assessing the biomass, the fishery shall be managed for an exploitation based on the pre-season projected return.
  - (2) The first commercial opening of the sac roe fishery must be for herring gill nets.
  - (3) Whenever possible, openings for both gear types must begin during the hours of daylight, and special consideration will be given to afford the maximum amount of daylight.
  - (4) The department may allow only one gear type to operate in an area during any open period.
  - (7) The maximum exploitation rate for the Bristol Bay herring stock is 20 percent. Before opening the sac roe fishery, the department shall set aside approximately 1,500 short tons for the Togiak district herring spawn-on-kelp fishery, and seven percent of the remaining available harvest for the Dutch Harbor food and bait fishery.
  - (8) After the spawn-on-kelp harvest and the Dutch Harbor food and bait fishery have been subtracted, the remaining harvestable surplus is allocated to the sac roe fishery. The department shall manage for a removal of 25 percent of that surplus by the gill net fleet and 75 percent by the purse seine fleet.
  - (9) If a manageable separation of the year classes occurs, an exploitation rate of up to 20 percent may be allowed on the younger age herring (4 years or less), and no fishery will be considered if this recruit population is less than 20,000 short tons.
  - (10) Late season (post-peak) sac roe openings must be based on one or more of the following criteria:
    - (A) A definable increase in the biomass of herring present on the fishing grounds;
    - (B) A major shift in the age composition of the herring in a definable biomass that is large enough to allow a harvest; and

- (C) a major improvement in the roe maturity of fish sampled over a broad area, indicating the arrival of a quantity of new herring.

ARTICLE 10. - STATISTICAL AREA M; ALASKA PENINSULA-ALEUTIAN ISLANDS AREA.

5 AAC 27.600. DESCRIPTION OF AREA. Statistical area M includes all waters bound on the east by a line extending southeast ( $135^{\circ}$ ) from the southernmost tip of Kupreanof Point, on the west by the International Date Line, and on the north by a line extending west from the westernmost tip of Cape Menshikof.

5 AAC 27.605. DESCRIPTION OF DISTRICTS AND SECTIONS.

- (a) Sand Point district: all waters on the south (Pacific) side of the Alaska Peninsula between the western boundary of the Chignik Area and  $161^{\circ}$  W. long.
- (1) Stepovak Bay section: all waters of the Sand Point district located north of  $55^{\circ}32'$  N. lat. and east of  $160^{\circ}30'$  W. long.
  - (2) Swedania Point-Balboa Bay section: all waters of the Sand Point district located between  $160^{\circ}31'$  W. long. and  $160^{\circ}47'$  W. long., and north of  $55^{\circ}26'$  N. lat.
  - (3) Point Aliaksin-Beaver Bay section: all waters of the Sand Point district located between  $160^{\circ}47'$  W. long. and  $161^{\circ}$  W. long., and north of  $55^{\circ}26'$  N. lat.
  - (4) General section: all other waters of the Sand Point district.
- (b) Pavlof district: all waters on the south (Pacific) side of the Alaska Peninsula between  $161^{\circ}$  W. long. and a line extending  $150^{\circ}$  from  $55^{\circ}05'54''$  N. lat.,  $161^{\circ}59'$  W. long. through Inner and Outer Iliasik Islands, including Bear and Volcano Bays.
- (1) Canoe Bay section: all waters of Canoe Bay east of  $161^{\circ}21'45''$  W. long.
  - (2) Pavlof Bay section: all waters of Pavlof Bay north of  $55^{\circ}21'42''$  N. lat. (latitude of Cape Tolstoi), excluding the Canoe Bay and Seal Cape-Wosnesenski sections.
  - (3) Seal Cape-Wosnesenski section: all waters of the Pavlof district located between  $161^{\circ}$  W. long. and  $161^{\circ}30''$  W. long. (longitude of Cape Tolstoi).
  - (4) General section: all other waters of the Pavlof district.
- (c) King Cove district: all waters of the south (Pacific) side of the Alaska Peninsula between a line extending  $150^{\circ}$  from  $55^{\circ}05'54''$  N. lat.,  $161^{\circ}59'$  W. long. through Inner and Outer Iliasik Islands and  $163^{\circ}30'$  W. long., including waters of Isanotski Strait south of a line from Nichols Point to the False Pass dock.

- (1) Belkofski section: all waters of the King Cove district east of 162°15' W. long. (longitude of Bold Cape).
- (2) Deer Passage section: all waters of the King Cove district between 162°15' W. long. (longitude of Bold Cape) and 162°25' W. long (longitude of Vodapoini Point), and north of 54°55' N. lat., excluding all waters of Lenard Harbor.
- (3) Cold Bay section: all waters of the King Cove district bounded by a line from Thin Point to Vodapoini Point.
- (4) General section: all other waters of the King Cove district.
- (d) Unimak district: all waters on the southside of Unimak Island between 163°30' W. long. and the longitude of Scotch Cap Light.
- (e) Akutan district: all waters extending west of Unimak Island to and including Akutan Pass.
- (f) Unalaska district: all waters west of Akutan Pass to and including Umnak Pass.
  - (1) Unalaska Bay section: all waters of the Unalaska Bay district enclosed by a line from Priest Rock at 54°00'24" N. lat., 166°22'42" W. long. to Cape Cheerful at 54°00'33" N. lat., 166°37'45" W. long.
  - (2) General section: all waters of the Unalaska district not included in the Unalaska Bay Section.
- (g) Umnak district: all waters west of Umnak Pass to and including Atka Pass.
- (h) Adak district: all waters west of Atka Pass to the terminus of the Aleutian Islands.
- (i) Amak district: all Bering Sea waters south and west of Cape Lieskof (55°47' N. lat., 162°04' W. long.) to the longitude of Cape Sarichef Light, including all waters of Bechevin Bay and Isanotski Strait north of a line from the False Pass Cannery dock to the tip of Nichols Point.
- (j) Port Moller district: all Bering Sea waters between the latitude of Cape Lieskof and the latitude of Cape Seniavin (56°24' N. lat.).
  - (1) Western section: all waters of the Port Moller district west of the longitude of Wolf Point on Walrus Island, excluding the waters of Herendeen Bay and Deer Island - Mud Bay Sections.
  - (2) Deer Island - Mud Bay section: all waters of the Port Moller district bounded by a line from the northernmost tip of Point Edward to the southernmost tip of Wolf Point on Walrus Island to Point Divide (55°53'10" N. lat., 160°46' W. long.) to the northernmost tip of Black Point.

- (3) Herendeen Bay section: all waters of Herendeen Bay south of a line from the northernmost tip of Black Point to Point Divide (55°53'10" N. lat., 160°47' W. long.).
- (4) Inner Port Moller section: all waters of Port Moller Bay enclosed by a line from Point Divide (55°53'10" N. lat., 160°47' W. long), to Harbor Point (55°55' N. lat., 160°34'30" W. long.).
- (5) Outer Port Moller Bay section: all waters of the Port Moller district south and east of a line from Point Divide (55°53'10" N. lat., 160°47' W. long.) to the southernmost tip of Wolf Point on Walrus Island to the southernmost tip of Entrance Point (55°59'30" N. lat., 160°34' W. long.).
- (6) Bear River section: all Bering Sea waters between the longitude of Wolf Point on Walrus Island and Cape Seniavin Light, excluding the waters of the Herendeen Bay, Deer Island - Mud Bay, Outer Port Moller Bay, and Inner Port Moller Bay Sections.
- (k) Port Heiden district: all waters between the latitude of Cape Seniavin (56°24' N. lat.) and the latitude of Cape Menshikof (57°31'20" N. lat.).

5 AAC 27.610. FISHING SEASONS AND PERIODS.

- (a) In the Sand Point, Pavlof, King Cove, Amak, Port Moller, and Port Heiden districts, herring may be taken from April 15 through July 15 (sac roe season) and from August 15 through February 28 (food and bait season).
- (b) In the Unimak, Akutan, Unalaska, Umnak, and Adak districts, herring may be taken from April 15 through July 15 (sac roe season).
- (c) In the Unimak, Akutan, Unalaska districts and that portion of the Umnak district east of Samalga Pass from July 16 through February 28 (food and bait season).
- (d) Herring may be taken only during periods established by emergency order.

5 AAC 27.630. GEAR. Herring may be taken only by purse seines and gill nets.

5 AAC 27.631. GILL NET SPECIFICATIONS AND OPERATIONS.

- (a) During the herring sac roe season, the aggregate length of herring gill nets in use by a herring CFEC permit holder may not exceed 150 fathoms.
- (b) The interim-use or entry permit holder must be physically present while the gill net is being fished.
- (c) Each drift gill net in operation must have a buoy at one end and the opposite end must be attached to the fishing vessel. Each set gill net in operation must be anchored and buoyed at both ends. Each buoy must

be plainly and legibly marked with the permanent vessel license plate number (ADF&G number) of the vessel operating the gear. The buoy may bear only a single number and this number must be that of the vessel used in operating the gear. The numbers must be painted on the top one-third of the buoy in numerals at least four inches in height, one-half inch in width and in a color contrasting to that of the buoy. The buoy markings must be visible on the buoy above the water surface.

5 AAC 27.632. SEINE SPECIFICATIONS AND OPERATIONS. During the herring sac roe season, no purse seine may be more than 1,000 meshes in depth and more than 100 fathoms in length. During the herring food and bait season, no purse seine may be more than 250 fathoms in length.

5 AAC 27.650. WATERS CLOSED TO HERRING FISHING.

- (a) Herring may not be taken from June 25 through September 30 in any waters closed to salmon fishing.

5 AAC 27.660. HARVEST STRATEGY.

- (b) The department shall manage the Sand Point, Pavlof, and King Cove districts so that 75 percent of the estimated guideline harvest level of 1,200 short tons is taken during the sac roe season and 25 percent is taken during the food and bait season. If the 75 percent is not taken during the sac roe season, then the amount of herring not taken may be allowed to be taken during the food and bait season. The department shall adjust the guideline harvest level based on herring biomass assessments conducted during the sac roe season.

5 AAC 27.662. BUYER AND TENDER REPORTING REQUIREMENTS. In addition to the requirements of 5 AAC 39.130(f) each tender operator and each buyer or his agents shall report in person to and register with a local representative of the department upon arrival in the statistical area before commencing operations and before changing location of the operation. Each buyer shall:

- (1) identify all vessels to be employed in transporting or processing herring and shall register such vessels with a local representative of the department located in the statistical area before transporting or processing of herring;
- (2) make daily reports of all herring purchased from fishermen, and other processing records as specified by a local representative of the department; and
- (3) submit fish tickets before departure from the area and no later than 10 days after termination of buying operations in the area, or as otherwise specified by a local representative of the department.

NOTE: During the October 21-26, 1991 Board of Fisheries meeting the food and bait herring fisheries in North and South Peninsula waters were eliminated; all herring were allocated to sac roe fisheries. Emergency Order 4-F-M-SP-35-91 closed these fisheries effective 1:00 P.M. October 29, 1991.



LIST OF 1991 EMERGENCY ORDERS

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HERRING

EMERGENCY ORDER NO. 4-F-M-SP-01-91

EFFECTIVE DATE: April 15, 1991

EXPLANATION: This emergency order establishes weekly commercial herring sac roe season fishing periods as follows for the Alaska Peninsula and Aleutian Islands Management Areas:

- (1) South Peninsula: Sand Point, Pavlof, and King Cove Districts.

April 15 through July 15 herring may be taken during Sunday through Saturday.

- (2) Aleutian Islands: Unimak, Akutan, Unalaska, Umnak, and Adak Districts.

April 15 through June 15 herring may be taken during Sunday through Saturday.

June 16 through July 15, no open fishing periods.

- (3) North Peninsula: Amak, Port Moller, and Port Heiden Districts.

- (a) Amak and Port Heiden Districts.

April 15 through June 30 herring may be taken during Sunday through Saturday.

July 1 through July 15, no open fishing periods.

- (b) Port Moller District.

May 30 through June 30 herring may be taken during Sunday through Saturday.

July 1 through July 15, no open fishing periods.

JUSTIFICATION: Fishing time is needed to allow herring sac roe harvests in the Alaska Peninsula and Aleutian Islands Management Areas during the sac roe season. Effort is anticipated to be light in all districts. Therefore, until harvests indicate more conservative measures are needed, seven fishing days per week can be allowed without causing stock conservation concerns. The reason that portions of the area will remain closed during part of the sac roe season is as follows:

Unimak, Akutan, Unalaska, Umnak, and Adak Districts during June 16 through July 15:

These districts are managed on a herring food and bait fishery allocation during the food and bait season beginning July 16. The food and bait fishery is managed on the basis of 5 AAC 27.060 Bering Sea Herring Fishery Management Plan. During some years food and bait stocks (non local spawning stocks) are present by June 16. The closure from June 16 through July 15 will prevent food and bait herring being harvested prior to the food and bait season. If sac roe stocks are discovered during the June 16 through July 15 time period, appropriate locations can be opened to herring sac roe fishing by subsequent emergency order(s).

Port Moller District during April 15 through May 29:

Scale pattern analysis data indicates there are at least three stocks of herring in the Port Moller District. An early May stock was subject to intense fishing pressure prior to 1989, while the later (late May and June) larger stock has not been subject to the same exploitation rate. Until a large early biomass of herring is observed or until such time that the large late biomass is anticipated to arrive (after May 29), the time and duration of fishing periods will depend on factors such as observed biomass and effort levels.

Amak, Port Moller, and Port Heiden Districts during July 1 through July 15:

These districts are managed on a herring food and bait fishery allocation during the food and bait season beginning July 16. During some years food and bait stocks (non local spawning stocks probably of Togiak origin) are present off shore by July 1. The closure from July 1 through July 15 will prevent food and bait herring being harvested prior to the food and bait season. If sac roe stocks are discovered during the July 1 through July 15 time period, appropriate locations can be opened to herring sac roe fishing by subsequent emergency order(s).

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EMERGENCY ORDER NO. 4-F-M-SP-02-91

EFFECTIVE DATE: 7:00 P.M. May 17, 1991

EXPLANATION: This emergency order supersedes Emergency Order Number 4-F-M-SP-01-91 in regards to the Port Moller District commercial herring sac roe fishery opening time and date. This emergency order establishes an opening time of 7:00 P.M. May 17, 1991 for the Western, Inner Port Moller, Outer Port Moller, and Bear River Sections of the Port Moller District herring sac roe season with fishing periods as follows:

(3) North Peninsula: Port Moller District.

(b) Western, Inner Port Moller, Outer Port Moller, and Bear River Sections of the Port Moller District.

May 17, 7:00 P.M. through June 30 herring may be taken during Sunday through Saturday.

July 1 through July 15, no open fishing periods.

JUSTIFICATION: An aerial survey by the Alaska Department of Fish and Game on May 17, 1991 indicated a herring biomass of about 1,000 tons in the Port Moller District. Fishing time is needed to allow a herring sac roe harvest in the Port Moller District. Effort is anticipated to be light, there are currently three or four fishing vessels and no tenders in the Port Moller District. Therefore, until harvests indicate more conservative measures are needed, seven fishing days per week can be allowed without causing stock conservation concerns. Only 45 to 55 tons of herring were observed in the Herendeen and Deer Island-Mud Bay Sections; those sections will remain closed. The guideline harvest level for Outer Moller Bay Section is established at 90 tons and for Inner Moller Bay Section at 70 tons.

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EMERGENCY ORDER NO. 4-F-M-SP-03-91

EFFECTIVE DATE: 1:00 P.M. May 18, 1991

EXPLANATION: This emergency order supersedes Emergency Order Number 4-F-M-SP-01-91 in regards to the Port Moller District commercial herring sac roe fishery opening time and date. This emergency order establishes an opening time of 1:00 P.M. May 18, 1991 for the Mud Bay-Deer Island and Herendeen Bay Sections of the Port Moller District herring sac roe season with fishing periods as follows:

(3) North Peninsula: Port Moller District.

(b) Deer Island-Mud Bay and Herendeen Bay Sections of the Port Moller District.

May 18, 1:00 P.M. through June 30 herring may be taken during Sunday through Saturday.

July 1 through July 15, no open fishing periods.

JUSTIFICATION: An aerial survey by the Alaska Department of Fish and Game during the morning of May 18, 1991 indicated a herring biomass of an additional 450 tons in the Herendeen Bay Section of the Port Moller District. Fishing time is needed to allow a herring sac roe harvest in the Herendeen Bay Section. Effort is anticipated to be light, there are currently five to six fishing vessels and two tenders in the Port Moller District. Therefore, until harvests indicate more conservative measures are needed, seven fishing days per week can be allowed without causing stock conservation concerns. The guideline harvest level for the Port Moller District will be the guideline established preseason in the management plan: 90 ton harvest for the Herendeen Bay stock, 90 ton harvest for the Inner Moller Bay stock, and 120 ton harvest for the Outer Moller Bay Section. Any herring caught in the Mud Bay-Deer Island Section will be counted against the Herendeen Bay guideline harvest level.

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EMERGENCY ORDER NO. 4-F-M-SP-04-91

EFFECTIVE DATE: 8:00 A.M. May 20, 1991

EXPLANATION: This emergency order closes the Deer Island-Mud Bay and Herendeen Bay Sections of the Port Moller District to commercial herring fishing effective 8:00 A.M. May 20, 1991 through 12:00 P.M. midnight July 15, 1991.

JUSTIFICATION: The herring catch in the Deer Island-Mud Bay and Herendeen Bay Sections is estimated at 70 tons. The Alaska Department of Fish and Game expects the harvest through 8:00 A.M. May 20, 1991 should be 90 tons; the guideline harvest level established for Herendeen Bay. Aerial surveys by the Alaska Department of Fish and Game will continue and if more herring are observed entering Herendeen Bay the guideline harvest level will be adjusted.

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EMERGENCY ORDER NO. 4-F-M-SP-05-91

EFFECTIVE DATE: 11:00 A.M. May 20, 1991

EXPLANATION: This emergency order closes the Outer Moller Bay Section of the Port Moller District to commercial herring fishing effective 11:00 A.M. May 20, 1991 through 12:00 P.M. midnight July 15, 1991.

JUSTIFICATION: The herring catch in the Deer Island-Mud Bay and Herendeen Bay Sections is estimated at 170 tons and the catch in the Outer Port Moller Bay Section is estimated at 90 tons. Aerial surveys by the Alaska Department of Fish and Game indicate that most herring currently moving into the District are bound for Herendeen Bay. The Herendeen Bay guideline harvest level has been exceeded and to prevent further harvest on the Herendeen Bay stock the Outer Port Moller Bay Section should be closed at this time.

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EMERGENCY ORDER NO. 4-F-M-SP-06-91

EFFECTIVE DATE: 8:00 A.M. May 23, 1991

EXPLANATION: This emergency order opens the Outer Port Moller Bay Section of the Port Moller District to commercial herring fishing effective 8:00 P.M. May 23, 1991 until 12:00 P.M. midnight July 15, 1991.

JUSTIFICATION: Aerial surveys by the Alaska Department of Fish and Game indicate that more herring are moving into the Port Moller District. The biomass estimate for the Inner Port Moller Bay Section is 2,500 tons and for Herendeen Bay Section is 1,000 tons. The herring catch from the Herendeen Bay stock is 177 tons and for the Inner Port Moller Bay stock is 85 tons. Aerial surveys by the Alaska Department of Fish and Game indicate that most herring currently moving into the District are bound for Inner Port Moller Bay. At this time catches should be concentrated on the Inner Port Moller Bay stock which currently has an exploitation rate of only 3 percent.

The guideline harvest level for the Inner Port Moller Bay Section is established at 150 tons and for the Outer Port Moller Bay Section is increased an additional 200 tons (285 tons for a season total).

EMERGENCY ORDER NO. 4-F-M-SP-07-91

EFFECTIVE DATE: 12:00 Noon June 3, 1991

EXPLANATION: This emergency order increases the guideline harvest level for the Inner Port Moller Bay Section an additional 150 tons (300 tons for the season total).

JUSTIFICATION: The commercial herring catch in the Port Moller District is an estimated 655 tons: 177 tons from the Herendeen Bay stock and 478 tons from the Inner Port Moller Bay stock.

The biomass estimate for the Herendeen Bay stock is 1,973 tons and for the Inner Port Moller Bay stock is 3,228 tons. The exploitation rate as based on the present biomass and catch estimates for the Inner Port Moller Bay stock is 15 percent and for the Herendeen Bay stock is 9 percent.

Aerial surveys by the Alaska Department of Fish and Game indicate that more herring are moving into the Port Moller District. Currently, herring in the Outer Port Moller Bay Section are moving into the Inner Port Moller Bay Section. The 1991 Alaska Peninsula and Aleutian Islands Management Areas herring sac roe and food and bait management plan (R.I.R. # 4K91-6) states that the guideline harvest level for a fishery will be adjusted if less or greater than expected numbers of herring move into a section. An additional 150 ton catch should produce an Inner Port Moller Bay stock harvest of 638 tons; an exploitation rate of 20 percent as based on the current biomass estimate. All herring in the Inner Port Moller Bay, Outer Port Moller Bay, and Bear River Sections are believed to be of the Inner Port Moller Bay stock. Herring schools in the Bear River Section will be closely monitored to see which local stock they comprise.

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EMERGENCY ORDER NO. 4-F-M-SP-08-91

EFFECTIVE DATE: 1:15 P.M. June 3, 1991

EXPLANATION: This emergency order closes the Port Moller District to commercial herring fishing effective 1:15 P.M. June 3, 1991 through 12:00 P.M. midnight July 15, 1991.

JUSTIFICATION: The herring catch in the Port Moller District is an estimated 800 tons. The exploitation rate is almost 20 percent. Aerial surveys by the Alaska Department of Fish and Game indicate that at this time no new herring are moving into the District. To prevent further harvest on Herendeen Bay and Inner Port Moller Bay stocks the entire Port Moller District should be closed at this time.

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EMERGENCY ORDER NO. 4-F-M-SP-09-91

EFFECTIVE DATE: 9:00 P.M. June 4, 1991

EXPLANATION: This emergency order opens all sections in the Port Moller District to commercial herring fishing effective 9:00 P.M. June 4, 1991 through 12:00 P.M. midnight July 15, 1991.

JUSTIFICATION: The commercial herring catch in the Port Moller District is an estimated 797 tons. Aerial surveys by the Alaska Department of Fish and Game indicate that new herring continue to move into the District. The Inner Port Moller Bay stock biomass is an estimated 3,331 tons; the Herendeen Bay stock biomass is an estimated 1,973 tons. An estimated 161 tons of herring spawned in the Bear River Section and an additional 336 tons of herring were observed in the Bear River Section. The exploitation rate for the Port Moller District is 12 percent; additional fishing time is needed to harvest herring.

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EMERGENCY ORDER NO. 4-F-M-SP-10-91

EFFECTIVE DATE: 12:15 P.M. June 6, 1991

EXPLANATION: This emergency order closes the Port Moller and Port Heiden Districts to commercial herring fishing effective 12:15 P.M. June 6, 1991 through 12:00 P.M. midnight July 15, 1991.

JUSTIFICATION: Recent herring catches in the Port Moller District are experiencing "belly burn"; the herring have an unsalable roe product within 21 hours of being caught; this has created an excessive waste problem.

The Port Moller and Port Heiden Districts commercial herring fishery is closed due to excessive waste of the herring being harvested. The authority to close a fishery because of excessive waste problems is outlined in Alaska Statutes 16.10.172: Legislative Policy on Utilization of Herring; 16.10.173: Utilization of Commercially taken Herring; and the Alaska Peninsula and Aleutian Islands Management Areas 1991 Herring sac roe and food and bait Management Plan.

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EMERGENCY ORDER NO. 4-F-M-SP-12-91

EFFECTIVE DATE: 10:30 A.M. June 10, 1991

EXPLANATION: This emergency order closes the Canoe Bay Section of the Pavlof District to commercial herring fishing effective 10:30 A.M. June 10, 1991 through 12:00 P.M. midnight July 15, 1991.

JUSTIFICATION: The guideline harvest level established for the Canoe Bay Section sac roe fishery was 94 tons, fishing vessels and tenders on the grounds report a harvest of 114 tons. Aerial surveys by the Alaska Department of Fish and Game do not warrant additional harvest of the Canoe Bay stock at this time. The Alaska Department of Fish and Game will continue aerial surveys and if a biomass of herring is observed that will lower the exploitation rate of the Canoe Bay herring stock well below 20 percent, the Canoe Bay Section may reopen at a later date.

EMERGENCY ORDER NO. 4-F-M-SP-13-91

EFFECTIVE DATE: 11:00 A.M. June 12, 1991

EXPLANATION: This emergency order opens all sections in the Port Moller District to commercial herring fishing effective 11:00 A.M. June 12, 1991 through 12:00 P.M. midnight July 15, 1991.

JUSTIFICATION: The commercial herring catch in the Port Moller District is an estimated 1,012 tons. Aerial surveys by the Alaska Department of Fish and Game indicate that new herring continue to move into the District. The Inner Port Moller Bay stock biomass is an estimated 4,201 tons (spawning stock of 3,356 tons and a catch of 845 tons); the Herendeen Bay stock biomass is an estimated 2,365 tons (spawning stock of 2,163 tons and a catch of 167 tons). An estimated 161 tons of herring spawned in the Bear River Section. The exploitation rate for the Port Moller District is 15 percent. Effort has declined to two purse seine vessels and one processor with a daily processing capacity of 30 tons. Because of the excessive waste problem on June 4-5; fishermen have been advised to limit daily catches to the daily processing capacity. Because both fishing vessels are working in combine and have agreed to a daily catch limit of 30 to 40 tons additional fishing time has been granted.

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EMERGENCY ORDER NO. 4-F-M-SP-18-91

EFFECTIVE DATE: 12:01 A.M. July 1, 1991

EXPLANATION: This emergency order supersedes Emergency Order Number 4-F-M-SP-01-91 in regards to the North Peninsula commercial herring sac roe season closing date. This emergency order extends the present commercial herring sac roe fishing season for the Amak, Port Moller, and Port Heiden Districts of the North Alaska Peninsula area through 12:00 P.M. midnight, July 15, 1991.

JUSTIFICATION: The commercial herring catch in the Port Moller District is an estimated 1,193 tons. Aerial surveys by the Alaska Department of Fish and Game through June 5 indicate that the biomass of herring in the Port Moller District was at least 7,000 tons and new herring continue to move into the District.

The exploitation rate for the Port Moller District is about 16 percent. Effort has declined to two purse seine vessels and one processor with a daily processing capacity of about 30 tons. Because of the excessive waste problem on June 4-5; fishermen have been advised to limit daily catches to the daily processing capacity. Because both fishing vessels are working in combine and have agreed to a daily catch limit of 25 to 40 tons additional fishing time has been granted.

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EMERGENCY ORDER NO. 4-F-M-SP-19-91

EFFECTIVE DATE: 6:00 P.M. June 29, 1991

EXPLANATION: This emergency order opens the Canoe Bay Section of the Pavlof District to commercial herring fishing effective 6:00 P.M. June 29, 1991 through 12:00 P.M. midnight, July 15, 1991.

JUSTIFICATION: The commercial herring catch in the Canoe Bay Section of the Pavlof District is 78 tons. The pre-season guideline harvest allocation was 94 tons. ADF&G biomass estimates for the Canoe Bay stock are insufficient to adjust the allocation from the pre-season estimate. Fishing effort is expected to be light with only one to three vessels and one processor participating in the fishery.

Because 16 tons remain on the pre-season guideline harvest level, additional fishing time has been granted.

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EMERGENCY ORDER NO. 4-F-M-SP-20-91

EFFECTIVE DATE: 2:00 A.M. July 16, 1991

EXPLANATION: This emergency order allows a 2:00 A.M., Tuesday, July 16 until 8:00 A.M. Tuesday, July 16 herring food and bait fishing period in the Aleutian Islands Management Area.

JUSTIFICATION: The Unimak, Akutan, Unalaska Umnak, and Adak Districts (Dutch Harbor) food and bait herring fishery is managed under the directives of the Bering Sea Herring Management Plan as described under 5 AAC 27.060.

The 1991 Dutch Harbor food and bait allocation is 931 tons. The allocation is based on 20% exploitation of the inseason Togiak herring biomass estimated of 74,000 short tons. The allocation is calculated as directed by the Bristol Bay Management Plan in the following manner:

Togiak Biomass Estimate	74,000 tons
Total Harvest Allocation	
at 20% Exploitation	14,800 tons
Subtraction of Togiak Kelp	
Harvest Allocation	<u>1,500 tons</u>
Subtotal	13,300 tons
Dutch Harbor Allocation at	
7% of Subtotal	931 tons

The Dutch Harbor herring food and bait fleet demonstrated during the 1990 herring food and bait season that given a large biomass of herring and good fishing conditions the fleet could harvest over 800 tons during a 12 hour fishing period. Fishing time is needed to allow herring food and bait harvests in the Aleutian Islands Management Area during the herring food and bait season but fishing periods of short duration are warranted to avoid jeopardizing the resource.

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EMERGENCY ORDER NO. 4-F-M-SP-27-91

EFFECTIVE DATE: 12:01 A.M. July 17, 1991

EXPLANATION: This emergency order allows a 12:01 A.M., Wednesday, July 17 until 8:00 A.M. Wednesday, July 17 herring food and bait fishing period in the Aleutian Islands Management Area.

JUSTIFICATION: The Unimak, Akutan, Unalaska Umnak, and Adak Districts (Dutch Harbor) food and bait herring fishery is managed under the directives of the Bering Sea Herring Management Plan as described under 5 AAC 27.060.

The Dutch Harbor herring food and bait fleet demonstrated during the 1990 herring food and bait season that given a large biomass of herring and good fishing conditions the fleet could harvest over 800 tons during a 12 hour fishing period. Fishing time is needed to allow herring food and bait harvest in the Aleutian Islands Management Area during the herring food and bait season but fishing periods of short duration are warranted to avoid jeopardizing the resource.

Weather during the 2:00 A.M. until 8:00 A.M. Tuesday, July 16 fishing period prevented any fishing effort. A 12:01 A.M. until 8:00 A.M. Wednesday, July 17 fishing period will give fishermen the opportunity to harvest the 931 ton herring food and bait allocation.

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EMERGENCY ORDER NO. 4-F-M-SP-28-91

EFFECTIVE DATE: 6:38 A.M. July 17, 1991

EXPLANATION: This emergency order closes the food and bait herring fishery season in the Unimak, Akutan, Unalaska, Umnak, and Adak Districts of the Aleutian Islands Management Area.

JUSTIFICATION: The Unimak, Akutan, Unalaska Umnak, and Adak Districts (Dutch Harbor) food and bait herring fishery is managed under the directives of the Bering Sea Herring Management Plan as described under 5 AAC 27.060.

The 1991 Aleutian Islands Management Area food and bait herring season guideline harvest level was 931 tons. By 6:35 A.M., Wednesday, July 17, fishing vessel, tender, and processor reports indicated that 870 tons of herring were caught; in addition other fishing vessels are believed to have caught more herring but at this time they have not reported. An immediate closure effective at 6:38 A.M. Wednesday, July 17 is necessary to prevent exceeding the 931 ton allocation.

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EMERGENCY ORDER NO. 4-F-M-SP-29-91

EFFECTIVE DATE: 12:01 A.M. August 15, 1991

EXPLANATION: This emergency order opens the food and bait herring fishery season in the Sand Point, Pavlof, and King Cove Districts of the Alaska Peninsula Management Area. This emergency order establishes a fishing period of 12:01 A.M. August 15 through 12:00 P.M., midnight, February 28, 1992 herring food and bait season in the South Peninsula area.

JUSTIFICATION: The Sand Point, Pavlof, and King Cove Districts (South Peninsula) food and bait herring fishery is managed under the directives of the 1991 Alaska Peninsula and Aleutian Islands Management Areas herring sac roe and food and bait management plan and as described under 5 AAC 27.660.

Fishing time is needed to allow a herring food and bait harvest in the Sand Point, Pavlof, and King Cove Districts (South Peninsula). Effort is anticipated to be light, only two fishing vessels have expressed interest in the fishery. Therefore, until harvests indicate more conservative measures are needed, seven fishing days per week can be allowed without causing stock conservation concerns. Guideline harvest levels by section have been established through a new release dated August 8, 1991.

The sac roe harvest in the Port Moller District was 1,313 tons or an exploitation rate of about 20% of the observed spawning biomass. Therefore, the food and bait season in the North Peninsula: Amak, Port Moller, and Port Heiden Districts will remain closed.

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EMERGENCY ORDER NO. 4-F-M-SP-30-91

EFFECTIVE DATE: 10:00 A.M. August 20, 1991

EXPLANATION: This emergency order closes the food and bait herring fishery season in the King Cove District of the Alaska Peninsula Management Area for the remainder of the food and bait herring season (12:00 P.M., midnight, February 28, 1992).

JUSTIFICATION: The Sand Point, Pavlof, and King Cove Districts (South Peninsula) food and bait herring fishery is managed under the directives of the 1991 Alaska Peninsula and Aleutian Islands Management Areas herring sac roe and food and bait management plan and as described under 5 AAC 27.660.

Tender catch reports indicate that the herring food and bait harvest in the King Cove District is at least 156 tons. The guideline harvest level for the district was 110 tons. Therefore, the King Cove District herring food and bait season is closed for the remainder of the food and bait season (12:00 P.M., midnight, February 28, 1992).

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EMERGENCY ORDER NO. 4-F-M-SP-35-91

EFFECTIVE DATE: 1:00 P.M. October 29, 1991

EXPLANATION: This emergency order closes the food and bait commercial herring fishing season in the Sand Point, Pavlof, King Cove, Amak, Port Moller, and Port Heiden districts from October 29, 1991 until February 28, 1992 (the remainder of the food and bait herring season).

JUSTIFICATION: The Board of Fish during the October 21-26 meeting eliminated the food and bait commercial herring fisheries in North and South Peninsula waters. All commercially harvest herring are now allocated to the sac roe

fishery. To ensure a timely closure of these fisheries and to provide industry and fishermen notice of the closure this emergency order is provided.

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## MISCELLANEOUS ACTIVITY OR OBSERVATIONS

Russell Creek Hatchery collected 1,300,000 sockeye, 300,000 coho, 8,000,000 pink and 14,600,000 chum salmon eggs during 1991. The sockeye salmon eggs were taken from the Mortensen's Lagoon system. The coho and pink salmon eggs were largely taken from Russell Creek Hatchery returns. The chum salmon eggs were collected from wild Russell Creek fish.

The Stellers sea lion population in the Bering Sea and Western Gulf of Alaska continues to decline. The willow ptarmigan population around Cold Bay appeared to be slightly better than that of 1990. The lower Alaska Peninsula caribou herd still remains at a low level. Apparently the calves are dying from factors other than predation.

The crowberry crop near Cold Bay was poor but better than the 1990 crop. Salmonberries and blueberries were moderately abundant. The strawberry crop was a failure.

Construction began on the new Sand Point runway. However, the project is not scheduled to be completed before the end of the 1992 construction season.

Reeve Aleutian Airways began servicing Dutch Harbor again, using an Electra. Dutch Harbor is also serviced by MarkAir and Peninsula Airways.

Kodiak tides, 1991.

Date	---HIGH TIDE---		---HIGH TIDE---		---LOW TIDE---		---LOW TIDE---		
	Time	Feet	Time	Feet	Time	Feet	Time	Feet	
May	1	3:37 AM	9.1	4:53 PM	6.7	10:25 AM	-1.0	10:03 PM	2.5
	2	4:09 AM	8.8	5:33 PM	6.3	11:01 AM	-0.6	10:39 PM	2.8
	3	4:44 AM	8.4	6:19 PM	6.0	11:43 AM	-0.2	11:16 PM	3.2
	4	5:24 AM	7.9	7:07 PM	5.8	:		12:25 PM	0.3
	5	6:08 AM	7.3	8:03 PM	5.7	0:04 AM	3.4	1:15 PM	0.7
	6	7:01 AM	6.8	9:01 PM	5.9	1:03 AM	3.6	2:08 PM	1.1
	7	8:16 AM	6.3	9:56 PM	6.3	2:23 AM	3.6	3:02 PM	1.4
	8	9:36 AM	6.1	10:58 PM	6.9	3:43 AM	3.1	4:00 PM	1.5
	9	10:50 AM	6.1	11:01 PM	7.6	4:52 AM	2.3	4:50 PM	1.6
	10	11:57 AM	6.4	:		5:47 AM	1.3	5:39 PM	1.7
	11	0:00 AM	8.3	12:55 PM	6.7	6:36 AM	0.2	6:24 PM	1.7
	12	0:42 AM	9.1	1:43 PM	7.1	7:22 AM	-0.9	7:08 PM	1.7
	13	1:21 AM	9.7	2:36 PM	7.3	8:06 AM	-1.7	7:51 PM	1.7
	14	2:01 AM	10.2	3:29 PM	7.4	8:53 AM	-2.3	8:35 PM	1.8
	15	2:46 AM	10.5	4:20 PM	7.3	9:41 AM	-2.6	9:21 PM	1.9
	16	3:32 AM	10.4	4:06 PM	7.2	10:30 AM	-2.5	10:12 PM	2.1
	17	4:21 AM	10.1	5:50 PM	7.1	11:19 AM	-2.1	11:04 PM	2.3
	18	5:13 AM	9.5	6:31 PM	7.0	:		12:09 PM	-1.5
	19	6:12 AM	8.6	7:12 PM	7.1	0:06 AM	2.5	1:06 PM	-0.8
	20	7:18 AM	7.7	8:56 PM	7.3	1:20 AM	2.6	2:03 PM	0.0
	21	8:37 AM	6.9	9:39 PM	7.6	2:40 AM	2.4	3:02 PM	0.7
	22	10:00 AM	6.4	10:25 PM	8.1	4:05 AM	1.9	3:59 PM	1.3
	23	11:15 AM	6.2	11:16 PM	8.4	5:14 AM	1.2	4:56 PM	1.7
	24	:		12:06 PM	6.2	6:15 AM	0.4	5:43 PM	2.1
	25	0:11 AM	8.8	1:51 PM	6.4	7:00 AM	-0.2	6:31 PM	2.3
	26	0:51 AM	9.0	2:37 PM	6.5	7:43 AM	-0.7	7:13 PM	2.5
	27	1:27 AM	9.2	2:21 PM	6.6	8:21 AM	-1.0	7:53 PM	2.6
	28	2:04 AM	9.2	3:23 PM	6.7	8:59 AM	-1.2	8:31 PM	2.5
	29	2:38 AM	9.2	4:13 PM	6.6	9:34 AM	-1.2	9:09 PM	2.7
	30	3:15 AM	9.0	4:01 PM	6.6	10:09 AM	-1.1	9:45 PM	2.8
	31	3:48 AM	8.8	5:47 PM	6.5	10:44 AM	-0.9	10:23 PM	2.9
June	1	5:02 AM	8.5	5:58 PM	6.5	11:19 AM	-0.6	11:05 PM	3.1
	2	5:40 AM	8.0	6:38 PM	6.4	11:56 AM	-0.2	11:48 PM	3.2
	3	6:29 AM	7.5	7:17 PM	6.5	:		12:33 PM	0.2
	4	7:31 AM	6.8	8:03 PM	6.7	0:45 AM	3.2	1:12 PM	0.7
	5	8:43 AM	6.2	8:47 PM	7.1	1:48 AM	3.0	1:58 PM	1.2
	6	9:07 AM	5.7	9:33 PM	7.5	3:00 AM	2.6	2:48 PM	1.6
	7	10:22 AM	5.5	10:22 PM	8.1	4:09 AM	1.8	3:41 PM	2.0
	8	11:30 AM	5.6	11:12 PM	8.7	5:12 AM	0.9	4:37 PM	2.3
	9	:		12:31 PM	6.0	6:11 AM	-0.2	5:35 PM	2.4
	10	0:00 AM	9.4	1:31 PM	6.4	7:03 AM	-1.2	6:31 PM	2.4
	11	0:51 AM	10.0	2:24 PM	6.8	7:54 AM	-2.0	7:26 PM	2.3
	12	1:40 AM	10.5	3:13 PM	7.1	8:41 AM	-2.6	8:19 PM	2.1
	13	2:31 AM	10.7	4:02 PM	7.4	9:31 AM	-2.8	9:11 PM	1.9

-Continued-

Date	---HIGH TIDE---		---HIGH TIDE---		---LOW TIDE---		---LOW TIDE---			
	Time	Feet	Time	Feet	Time	Feet	Time	Feet		
June	14	3:23 AM	10.6	4:47 PM	7.6	10:18 AM	-2.7	10:06 PM	1.9	
	15	4:12 AM	10.2	5:36 PM	7.7	11:00 AM	-2.3	11:03 PM	1.8	
	16	5:07 AM	9.4	6:25 PM	7.9	11:50 AM	-1.7	:		
	17	6:03 AM	8.5	7:14 PM	8.0	0:03 AM	1.9	12:38 PM	-0.8	
	18	7:03 AM	7.4	8:06 PM	8.1	1:07 AM	1.9	1:24 PM	0.1	
	19	8:11 AM	6.4	8:58 PM	8.2	2:21 AM	1.8	2:13 PM	1.1	
	20	9:30 AM	5.7	9:52 PM	8.3	3:34 AM	1.5	3:06 PM	1.9	
	21	10:54 AM	5.4	10:45 PM	8.4	4:47 AM	1.0	4:02 PM	2.5	
	22	12:11 PM	5.4	11:34 PM	8.5	5:51 AM	0.5	5:01 PM	2.9	
	23	:		1:09 PM	5.6	6:45 AM	0.0	5:57 PM	3.1	
	24	0:20 AM	8.7	1:58 PM	5.9	7:27 AM	-0.5	6:48 PM	3.1	
	25	1:03 AM	8.9	2:37 PM	6.2	8:09 AM	-0.8	7:30 PM	2.9	
	26	1:45 AM	9.0	3:15 PM	6.4	8:42 AM	-1.0	8:13 PM	2.9	
	27	2:21 AM	9.1	3:51 PM	6.6	9:18 AM	-1.2	8:51 PM	2.7	
	28	2:59 AM	9.0	4:23 PM	6.8	9:51 AM	-1.2	9:30 PM	2.6	
	29	3:31 AM	8.9	4:55 PM	6.9	10:23 AM	-1.1	10:09 PM	2.6	
	30	4:07 AM	8.6	5:27 PM	7.0	10:52 AM	-0.8	10:49 PM	2.5	
	July	1	4:42 AM	8.1	5:58 PM	7.2	11:24 AM	-0.5	11:31 PM	2.5
		2	5:19 AM	7.6	6:30 PM	7.3	11:56 AM	0.0	:	
		3	6:03 AM	6.9	7:06 PM	7.5	0:19 AM	2.4	12:28 PM	0.6
		4	6:55 AM	6.2	7:47 PM	7.7	1:14 AM	2.2	1:04 PM	1.2
		5	7:59 AM	5.5	8:34 PM	8.0	2:18 AM	1.9	1:46 PM	1.8
		6	9:29 AM	5.1	9:30 PM	8.4	3:30 AM	1.4	2:41 PM	2.4
		7	11:01 AM	5.1	10:33 PM	8.9	4:43 AM	0.6	3:50 PM	2.8
		8	12:18 PM	5.5	1:35 PM	9.4	5:49 AM	-0.3	5:01 PM	2.9
		9	:		1:21 PM	6.0	6:50 AM	-1.2	6:10 PM	2.7
		10	0:34 AM	10.0	2:12 PM	6.6	7:43 AM	-2.0	7:13 PM	2.3
		11	1:30 AM	10.4	2:58 PM	7.2	8:31 AM	-2.5	8:10 PM	1.9
		12	2:22 AM	10.7	3:43 PM	7.7	9:17 AM	-2.7	9:04 PM	1.4
		13	3:14 AM	10.5	4:25 PM	8.2	10:00 AM	-2.6	9:57 PM	1.1
14		4:03 AM	10.0	5:07 PM	8.5	10:42 AM	-2.1	10:52 PM	0.9	
15		4:55 AM	9.2	5:49 PM	8.6	11:21 AM	-1.4	11:45 PM	0.9	
16		5:45 AM	8.2	6:33 PM	8.6	:		1:01 PM	-0.4	
17		6:40 AM	7.1	7:17 PM	8.5	0:43 AM	1.0	12:42 PM	0.6	
18		7:42 AM	6.0	8:06 PM	8.2	1:46 AM	1.2	1:24 PM	1.6	
19		8:59 AM	5.2	9:00 PM	8.0	2:57 AM	1.3	2:10 PM	2.4	
20		10:30 AM	4.9	10:02 PM	7.9	4:14 AM	1.1	3:09 PM	3.1	
21		11:54 AM	5.0	11:01 PM	8.0	5:27 AM	0.8	4:21 PM	3.5	
22		12:58 PM	5.3	11:59 PM	8.2	6:26 AM	0.4	5:30 PM	3.5	
23		:		1:43 PM	5.7	7:11 AM	-0.1	6:29 PM	3.3	
24		0:45 AM	8.5	2:19 PM	6.1	7:50 AM	-0.5	7:16 PM	3.0	
25		1:27 AM	8.8	2:51 PM	6.5	8:26 AM	-0.8	7:59 PM	2.6	
26		2:06 AM	8.9	3:23 PM	6.9	8:55 AM	-1.0	8:38 PM	2.3	
27		2:41 AM	9.0	3:51 PM	7.2	9:26 AM	-1.0	9:13 PM	2.0	

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Kodiak tides, 1991. (page 3 of 5)

Date	---HIGH TIDE---		---HIGH TIDE---		---LOW TIDE---		---LOW TIDE---	
	Time	Feet	Time	Feet	Time	Feet	Time	Feet
July	28	3:16 AM 8.9	4:18 PM 7.5		9:54 AM -1.0		9:49 PM 1.8	
	29	3:51 AM 8.6	4:45 PM 7.7		10:11 AM -0.7		10:27 PM 1.6	
	30	4:26 AM 8.1	5:13 PM 7.9		10:49 AM -0.3		11:07 PM 1.3	
	31	5:02 AM 7.6	5:42 PM 8.0		11:17 AM 0.2		11:50 PM 1.3	
Aug.	1	5:45 AM 6.9	6:14 PM 8.2		11:46 AM 0.8		:	
	2	6:33 AM 6.1	6:56 PM 8.2		0:40 AM 1.3		12:21 PM 1.5	
	3	7:36 AM 5.4	7:46 PM 8.3		1:42 AM 1.2		1:03 PM 2.2	
	4	9:09 AM 4.8	8:52 PM 8.4		2:55 AM 1.0		2:02 PM 2.8	
	5	10:50 AM 4.9	10:08 PM 8.6		4:21 AM 0.5		3:21 PM 3.2	
	6	12:11 PM 5.4	11:23 PM 9.1		5:35 AM -0.2		4:48 PM 3.1	
	7	:	1:08 PM 6.2		6:35 AM -1.0		6:05 PM 2.6	
	8	0:26 AM 9.7	1:53 PM 7.0		7:22 AM -1.6		7:08 PM 1.9	
	9	1:25 AM 10.1	2:35 PM 7.7		8:14 AM -2.0		8:04 PM 1.2	
	10	2:17 AM 10.3	3:16 PM 8.4		8:54 AM -2.1		8:54 PM 0.5	
	11	3:06 AM 10.1	3:53 PM 8.8		9:35 AM -1.9		9:44 PM 0.1	
	12	3:53 AM 9.6	4:31 PM 9.1		10:11 AM -1.4		10:33 PM -0.1	
	13	4:39 AM 8.8	5:07 PM 9.1		10:47 AM -0.6		11:19 PM 0.0	
	14	5:26 AM 7.8	5:48 PM 8.9		11:24 AM 0.3		:	
	15	6:17 AM 6.8	6:27 PM 8.5		0:11 AM 0.3		11:59 AM 1.2	
	16	7:10 AM 5.8	7:12 PM 8.1		1:07 AM 0.8		12:38 PM 2.1	
	17	8:25 AM 5.0	8:08 PM 7.6		2:11 AM 1.2		1:20 PM 2.9	
	18	10:03 AM 4.7	9:15 PM 7.4		3:23 AM 1.4		2:22 PM 3.5	
	19	11:37 AM 4.9	10:32 PM 7.4		4:51 AM 1.2		3:48 PM 3.8	
	20	12:36 PM 5.3	11:35 PM 7.7		5:59 AM 0.8		5:12 PM 3.6	
	21	:	1:15 PM 5.8		6:44 AM 0.4		6:13 PM 3.2	
	22	0:26 AM 8.1	1:46 PM 6.4		7:22 AM 0.0		7:03 PM 2.6	
	23	1:11 AM 8.4	2:15 PM 6.9		7:54 AM -0.3		7:40 PM 2.1	
	24	1:50 AM 8.6	2:43 PM 7.4		8:23 AM -0.6		8:20 PM 1.5	
	25	2:25 AM 8.7	3:09 PM 7.8		8:51 AM -0.6		8:54 PM 1.0	
	26	3:00 AM 8.7	3:34 PM 8.2		9:19 AM -0.5		9:29 PM 0.6	
	27	3:34 AM 8.4	4:02 PM 8.5		9:45 AM -0.2		10:05 PM 0.3	
	28	4:10 AM 8.0	4:28 PM 8.6		10:13 AM 0.2		10:43 PM 0.2	
	29	4:47 AM 7.4	5:00 PM 8.7		10:39 AM 0.7		11:27 PM 0.2	
	30	5:31 AM 6.8	5:34 PM 8.7		1:13 AM 1.4		:	
	31	6:22 AM 6.0	6:17 PM 8.5		0:17 AM 0.3		11:49 AM 2.0	
Sept.	1	7:27 AM 5.3	7:15 PM 8.3		1:20 AM 0.6		12:35 PM 2.7	
	2	9:05 AM 4.9	8:29 PM 8.1		2:36 AM 0.7		1:43 PM 3.2	
	3	10:48 AM 5.2	9:59 PM 8.2		4:02 AM 0.5		3:23 PM 3.4	
	4	11:54 AM 5.9	11:18 PM 8.6		5:18 AM 0.0		4:56 PM 3.0	
	5	:	12:45 PM 6.7		6:18 AM -0.6		6:07 PM 2.1	
	6	0:21 AM 9.1	1:27 PM 7.6		7:05 AM -1.0		7:05 PM 1.1	
	7	1:19 AM 9.4	2:06 PM 8.4		7:46 AM -1.2		7:58 PM 0.2	
	8	2:08 AM 9.5	2:42 PM 9.0		8:25 AM -1.1		8:44 PM -0.4	

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Date	---HIGH TIDE---		---HIGH TIDE---		---LOW TIDE---		---LOW TIDE---	
	Time	Feet	Time	Feet	Time	Feet	Time	Feet
Sept. 9	2:54 AM	9.3	3:17 PM	9.4	9:04 AM	-0.8	9:29 PM	-0.8
10	3:39 AM	8.9	3:52 PM	9.5	9:38 AM	-0.3	10:11 PM	-0.9
11	4:23 AM	8.2	4:26 PM	9.4	10:13 AM	0.4	10:55 PM	-0.7
12	5:08 AM	7.4	5:02 PM	9.0	10:46 AM	1.2	11:39 PM	-0.2
13	5:53 AM	6.6	5:37 PM	8.5	11:20 AM	1.9	:	
14	6:46 AM	5.7	6:19 PM	7.9	0:27 AM	0.4	11:56 AM	2.7
15	7:52 AM	5.1	7:15 PM	8.3	1:25 AM	1.0	12:41 PM	3.3
16	9:25 AM	4.8	8:26 PM	6.9	2:39 AM	1.4	1:43 PM	3.8
17	10:57 AM	5.1	9:52 PM	6.8	4:02 AM	1.5	3:25 PM	3.9
18	11:54 AM	5.5	11:06 PM	7.1	5:12 AM	1.2	4:53 PM	3.6
19	:		12:36 PM	6.1	6:02 AM	0.9	5:54 PM	2.9
20	0:00 AM	7.4	1:04 PM	6.8	6:39 AM	0.6	6:39 PM	2.2
21	0:47 AM	7.8	1:29 PM	7.4	7:14 AM	0.3	7:21 PM	1.4
22	1:27 AM	8.1	1:57 PM	8.0	7:40 AM	0.2	7:56 PM	0.6
23	2:06 AM	8.2	2:23 PM	8.5	8:10 AM	0.2	8:32 PM	0.0
24	2:42 AM	8.2	2:51 PM	8.9	8:40 AM	0.3	9:07 PM	-0.6
25	3:20 AM	8.1	3:20 PM	9.2	9:09 AM	0.6	9:45 PM	-0.8
26	3:59 AM	7.7	3:51 PM	9.4	9:41 AM	0.9	10:24 PM	-0.9
27	4:40 AM	7.2	4:26 PM	9.3	10:13 AM	1.4	11:10 PM	-0.8
28	5:27 AM	6.6	5:05 PM	9.1	10:49 AM	2.0	:	
29	6:24 AM	6.0	5:53 PM	8.7	0:02 AM	-0.5	11:32 AM	2.5
30	7:34 AM	5.5	6:57 PM	8.2	1:02 AM	0.0	12:29 PM	3.1

Note: To correct tables for local areas add or subtract time for high and low tides and feet for high and low tides.

Note: X Multiply height of district tide by ratio to result, add given correction for total height correction.

	Time		Feet	
	High	Low	High	Low
Alaska Peninsula:				
Fox Bay, Kupreanof Peninsula	+0:22	+0:36	X0.89	X0.89
Dent Point, Stepovak Bay	+0:21	+0:36	X0.89	X0.89
Albatross Anchorage,				
Balboa Bay	+0:32	+0:43	X0.91	X0.91
Beaver Bay	+0:37	+0:42	X0.87	X0.87
Seal Cape, Coal Bay	+0:34	+0:45	X0.84	X0.84
Ukolnoi Island	+0:41	+0:40	X0.83	X0.83
Dolgoi Harbor, Dolgoi Island	+0:44	+0:40	X0.79	X0.79
Settlement Point, Pavlof Bay	+0:43	+0:48	X0.84	X0.84
Canoe Bay, Pavlof Bay	+1:36	+1:30	X0.76	X0.76
King Cove	+0:40	+0:42	X0.80	X0.80
Lenard Harbor, Cold Bay	+0:46	+0:57	X0.85	X0.85
Cold Bay	+0:49	+1:03	X0.84	X0.84
Morzhovoi Bay	+0:50	+0:43	X0.80	X0.80

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	Time		Feet	
	High	Low	High	Low
<u>Shumagin Islands</u>				
Korovin Island (east side)	+0:26	+0:52	X0.92	X0.92
Sanborn Harbor, Nagai Island	+0:37	+0:37	X0.86	X0.86
Mist Harbor, Nagai Island	+0:35	+0:38	X0.83	X0.83
Pirate Cove, Popof Island	+0:42	+0:43	X0.88	X0.88
Sand Point, Popof Island	+0:30	+0:42	X0.87	X0.87
Zachary Bay, Unga Island	+0:34	+0:49	X0.88	X0.88
<u>Sanak Islands</u>				
Peterson Bay	+0:29	+0:32	X0.73	X0.73
Sanak Harbor	+0:48	+0:43	X0.78	X0.78
<u>Unimak Island</u>				
Dora Harbor	+0:49	+0:55	X0.77	X0.77
Ikatan Bay	+0:43	+0:45	X0.78	X0.78

Port Moller tides, 1991.

Date	---HIGH TIDE---		---HIGH TIDE---		---LOW TIDE---		---LOW TIDE---		
	Time	Feet	Time	Feet	Time	Feet	Time	Feet	
May	1	2:02 AM	11.3	1:24 PM	7.5	7:02 AM	6.4	7:19 PM	0.6
	2	2:45 AM	11.2	2:07 PM	7.3	8:32 AM	6.5	8:02 PM	1.1
	3	3:25 AM	11.1	2:50 PM	7.2	9:20 AM	6.5	8:44 PM	1.5
	4	4:05 AM	11.0	3:34 PM	7.2	10:03 AM	6.3	9:28 PM	1.9
	5	4:43 AM	10.8	4:21 PM	7.3	10:44 AM	6.0	10:12 PM	2.5
	6	5:20 AM	10.7	5:11 PM	7.4	11:25 AM	5.5	10:58 PM	3.1
	7	5:56 AM	10.5	6:03 PM	7.7	12:06 PM	4.8	11:47 PM	3.8
	8	6:33 AM	10.2	6:58 PM	8.1	:		12:46 PM	4.0
	9	7:10 AM	10.0	7:54 PM	8.7	0:38 AM	4.6	1:25 PM	2.9
	10	7:47 AM	9.7	8:49 PM	9.4	1:32 AM	5.3	2:05 PM	1.8
	11	8:26 AM	9.4	9:44 PM	10.2	2:28 AM	6.0	2:47 PM	0.6
	12	9:09 AM	9.1	10:39 PM	11.0	3:25 AM	6.4	3:30 PM	-0.6
	13	9:55 AM	8.9	11:33 PM	11.7	4:22 AM	6.7	4:16 PM	-1.7
	14	10:45 AM	8.8	:		5:20 AM	6.7	5:05 PM	-2.6
	15	0:26 AM	12.3	11:40 AM	8.7	6:16 AM	6.5	5:56 PM	-3.3
	16	1:20 AM	12.8	12:38 PM	8.7	7:12 AM	6.0	6:51 PM	-3.5
	17	2:13 AM	13.1	1:40 PM	8.8	8:07 AM	5.3	7:47 PM	-3.3
	18	3:06 AM	13.1	2:45 PM	8.9	9:02 AM	4.4	8:45 PM	-2.6
	19	3:58 AM	13.1	3:52 PM	9.0	9:57 AM	3.3	9:44 PM	-1.5
	20	4:49 AM	12.8	5:01 PM	9.2	10:51 AM	2.1	10:44 PM	0.0
	21	5:40 AM	12.3	6:11 PM	9.5	11:45 AM	0.9	11:46 PM	1.6
	22	6:30 AM	11.8	7:19 PM	9.9	:		12:37 PM	-0.2
	23	7:20 AM	11.1	8:26 PM	10.3	0:48 AM	3.1	1:28 PM	-1.0
	24	8:09 AM	10.4	9:29 PM	10.7	1:51 AM	4.5	2:18 PM	-1.4
	25	8:58 AM	9.6	10:27 PM	11.1	2:53 AM	5.6	3:06 PM	-1.5
	26	9:46 AM	8.9	11:22 PM	11.3	3:54 AM	6.4	3:53 PM	-1.3
	27	10:33 AM	8.2	:		4:53 AM	6.8	4:38 PM	-0.9
	28	0:11 AM	11.4	11:18 AM	7.7	5:48 AM	7.1	5:21 PM	-0.4
	29	0:57 AM	11.4	12:02 PM	7.3	6:40 AM	7.2	6:04 PM	0.2
	30	1:39 AM	11.3	12:45 PM	7.0	7:27 AM	7.2	6:45 PM	0.7
	31	2:18 AM	11.2	1:28 PM	6.9	8:12 AM	7.1	7:26 PM	1.2
June	1	2:55 AM	11.1	2:13 PM	6.8	8:54 AM	6.8	8:08 PM	1.8
	2	3:30 AM	11.0	3:01 PM	6.9	9:34 AM	6.3	8:50 PM	2.5
	3	4:03 AM	10.8	3:51 PM	7.0	10:13 AM	5.7	9:34 PM	3.2
	4	4:18 AM	10.7	4:44 PM	7.4	10:51 AM	4.8	10:21 PM	4.1
	5	5:09 AM	10.5	5:39 PM	7.8	11:29 AM	3.7	11:11 PM	5.0
	6	5:43 AM	10.2	6:35 PM	8.5	:		12:06 PM	2.5
	7	6:19 AM	10.0	7:30 PM	9.2	0:04 AM	5.8	12:45 PM	1.2
	8	6:57 AM	9.7	8:26 PM	10.0	1:01 AM	6.6	1:26 PM	-0.1
	9	7:39 AM	9.4	9:21 PM	10.9	1:59 AM	7.1	2:09 PM	-1.5
	10	8:26 AM	9.3	10:16 PM	11.6	2:58 AM	7.4	2:56 PM	-2.6
	11	9:17 AM	9.1	11:11 PM	12.3	3:56 AM	7.4	3:46 PM	-3.6
	12	10:14 AM	9.0			4:54 AM	7.2	4:39 PM	-4.2
	13	0:05 AM	12.8	11:14 AM	9.0	5:52 AM	6.6	5:34 PM	-4.3

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Port Moller tides, 1991. (page 2 of 4)

Date	---HIGH TIDE---			---HIGH TIDE---		---LOW TIDE---		---LOW TIDE---	
		Time	Feet	Time	Feet	Time	Feet	Time	Feet
June	14	0:58 AM	13.1	12:19 PM	9.0	6:49 AM	5.7	6:31 PM	-4.0
	15	1:51 AM	13.2	1:26 PM	9.0	7: : AM	4.6	7:29 PM	-3.1
	16	2:43 AM	13.2	2:35 PM	9.1	8:41 AM	3.3	8:28 PM	-1.8
	17	3:34 AM	13.0	3:46 PM	9.3	9:35 AM	1.8	9:28 PM	-0.2
	18	4:24 AM	12.5	4:56 PM	9.6	10:29 AM	0.5	10:29 PM	1.5
	19	5:13 AM	12.0	6:05 PM	10.0	11:22 AM	-0.7	11:30 PM	3.2
	20	6:02 AM	11.3	7:11 PM	10.3	:		12:13 PM	-1.5
	21	6:51 AM	10.6	8:15 PM	10.7	0:32 AM	4.7	1:03 PM	-1.9
	22	7:39 AM	9.8	9:14 PM	11.0	1:34 AM	5.8	1:52 PM	-2.0
	23	8:27 AM	9.1	10:09 PM	11.1	2:35 AM	6.7	2:39 PM	-1.7
	24	9:13 AM	8.5	11:01 PM	11.2	3:34 AM	7.3	3:25 PM	-1.3
	25	9:59 AM	8.0	11:48 PM	11.2	4:29 AM	7.6	4:09 PM	-0.8
	26	10:43 AM	7.5	:		5:21 AM	7.8	4:52 PM	-0.2
	27	0:31 AM	11.1	11:27 AM	7.2	6:11 AM	7.8	5:34 PM	0.4
28	1:11 AM	11.1	12:11 PM	7.0	6:57 AM	7.6	6:15 PM	1.0	
29	1:47 AM	11.0	12:56 PM	6.9	7:40 AM	7.3	6:56 PM	1.6	
30	2:21 AM	10.8	1:44 PM	6.9	8:21 AM	6.7	7:38 PM	2.4	
							:		
July	1	2:53 AM	10.7	2:35 PM	7.0	8:59 AM	6.0	8:21 PM	3.2
	2	3:24 AM	10.6	3:27 PM	7.3	9:36 AM	5.0	9:06 PM	4.1
	3	3:54 AM	10.4	4:21 PM	7.8	10:13 AM	3.9	9:54 PM	5.0
	4	4:26 AM	10.2	5:16 PM	8.4	10:49 AM	2.7	10:45 PM	5.9
	5	5:00 AM	10.0	6:11 PM	9.1	11:27 AM	1.3	11:39 PM	6.6
	6	5:37 AM	9.8	7:06 PM	9.9	:		12:07 PM	-0.1
	7	6:19 AM	9.6	8:01 PM	10.6	0:36 AM	7.2	12:51 PM	-1.5
	8	7:05 AM	9.5	8:57 PM	11.3	1:33 AM	7.5	1:39 PM	-2.7
	9	7:57 AM	9.5	9:52 PM	11.9	2:32 AM	7.6	2:29 PM	-3.7
	10	8:54 AM	9.4	10:47 PM	12.4	3:30 AM	7.4	3:23 PM	-4.3
	11	9:55 AM	9.4	11:41 PM	12.7	4:28 AM	6.9	4:19 PM	-4.4
	12	1:00 AM	9.4	:		5:26 AM	6.0	5:16 PM	-4.0
	13	0:34 AM	12.9	12:08 PM	9.4	6:24 AM	4.8	6:15 PM	-3.1
	14	1:26 AM	12.8	1:18 PM	9.5	7:20 AM	3.4	7:14 PM	-1.9
	15	2:17 AM	12.6	2:28 PM	9.6	8:15 AM	1.9	8:13 PM	-0.3
	16	3:07 AM	12.3	3:37 PM	9.9	9:09 AM	0.6	9:14 PM	1.3
	17	3:56 AM	11.8	4:45 PM	10.2	10:02 AM	-0.5	10:14 PM	2.9
	18	4:45 AM	11.2	5:50 PM	10.5	10:53 AM	-1.3	11:14 PM	4.3
	19	5:34 AM	10.6	6:52 PM	10.7	11:44 AM	-1.7	:	
	20	6:22 AM	9.9	7:51 PM	10.8	0:14 AM	5.5	12:33 PM	-1.7
	21	7:09 AM	9.3	8:47 PM	10.9	1:12 AM	6.4	1:21 PM	-1.5
	22	7:56 AM	8.8	9:39 PM	10.9	2:09 AM	7.0	2:08 PM	-1.2
	23	8:42 AM	8.3	10:28 PM	10.8	3:03 AM	7.5	2:54 PM	-0.7
	24	9:27 AM	8.0	11:14 PM	10.8	3:56 AM	7.8	3:39 PM	-0.2
	25	10:12 AM	7.7	11:55 PM	10.7	4:46 AM	7.8	4:23 PM	0.4
	26	10:58 AM	7.5	:		5:33 AM	7.7	5:05 PM	1.0
	27	0:33 AM	10.6	11:45 AM	7.4	6:18 AM	7.3	5:48 PM	1.7

-Continued-

Port Moller tides, 1991. (page 3 of 4)

Date	---HIGH TIDE---		---HIGH TIDE---		---LOW TIDE---		---LOW TIDE---	
	Time	Feet	Time	Feet	Time	Feet	Time	Feet
July	28	1:08 AM 10.4	12:34 PM 7.3	7:00 AM 6.8	6:31 PM 2.5			
	29	1:41 AM 10.3	1:25 PM 7.5	7:15 AM 6.0	7:15 PM 3.3			
	30	2:12 AM 10.1	2:16 PM 7.7	8:17 AM 5.1	8:00 PM 4.1			
	31	2:42 AM 9.9	3:08 PM 8.2	8:53 AM 4.1	8:47 PM 4.9			
Aug.	1	3:14 AM 9.8	4:00 PM 8.7	9:30 AM 2.9	9:37 PM 5.7			
	2	3:47 AM 9.6	4:53 PM 9.4	10:08 AM 1.6	10:28 PM 6.3			
	3	4:25 AM 9.5	5:46 PM 10.0	10:50 AM 0.2	11:22 PM 6.8			
	4	5: 6 AM 9.5	6:41 PM 10.6	11:34 AM -1.0	:			
	5	5:53 AM 9.5	7:36 PM 11.1	0:16 AM 7.1	12:23 PM -2.2			
	6	6:45 AM 9.5	8:31 PM 11.6	1:12 AM 7.2	1:15 PM -3.0			
	7	7:42 AM 9.6	9:27 PM 11.9	2:09 AM 7.0	2:09 PM -3.5			
	8	8:43 AM 9.6	10:21 PM 12.1	3:04 AM 6.5	3:06 PM -3.5			
	9	9:49 AM 9.7	11:15 PM 12.2	4:04 AM 5.6	4:04 PM -3.1			
	10	10:56 AM 9.8	:	5:01 AM 4.5	5:03 PM -2.3			
	11	0:07 AM 12.1	12:05 PM 9.9	5:57 AM 3.2	6:02 PM -1.1			
	12	0:59 AM 11.9	1:13 PM 10.1	6:52 AM 1.9	7:02 PM 0.2			
	13	1:49 AM 11.6	2:20 PM 10.3	7:46 AM 0.7	8:02 PM 1.6			
	14	2:39 AM 11.2	3:25 PM 10.6	8:39 AM -0.2	9:01 PM 2.9			
	15	3:28 AM 10.7	4:27 PM 10.8	9:30 AM -0.8	9:59 PM 4.0			
	16	4:17 AM 10.2	5:26 PM 10.9	10:20 AM -1.1	10:56 PM 4.9			
	17	5:05 AM 9.7	6:22 PM 10.9	11:10 AM -1.0	11:52 PM 5.7			
	18	5:52 AM 9.2	7:16 PM 10.8	11:59 AM -0.8	:			
	19	6:39 AM 8.8	8:08 PM 10.7	0:45 AM 6.4	12:47 PM -0.5			
	20	7:25 AM 8.5	8:57 PM 10.5	1:37 AM 6.8	1:34 PM -0.1			
	21	8:11 AM 8.3	9:43 PM 10.4	2:27 AM 7.1	2:20 PM 0.4			
	22	8:58 AM 8.1	10:27 PM 10.2	3:16 AM 7.2	3:06 PM 0.9			
	23	9:46 AM 8.0	11:06 PM 10.1	4:03 AM 7.0	3:52 PM 1.5			
	24	10:36 AM 7.9	11:44 PM 9.9	4:48 AM 6.7	4:37 PM 2.2			
	25	11:27 AM 8.0	:	5:31 AM 6.1	5:23 PM 2.9			
	26	0:19 AM 9.7	12:18 PM 8.2	6:12 AM 5.4	6:09 PM 3.7			
	27	0:52 AM 9.5	1:09 PM 8.5	6:51 AM 4.6	6:57 PM 4.4			
	28	1:25 AM 9.3	1:59 PM 8.9	7:29 AM 3.6	7:45 PM 5.1			
	29	1:59 AM 9.2	:49 PM 9.5	8:08 AM 2.6	8:34 PM 5.6			
	30	2:35 AM 9.0	3:40 PM 10.0	8:48 AM 1.5	9:24 PM 6.1			
	31	3:14 AM 9.0	4:31 PM 10.5	9:31 AM 0.4	10:16 PM 6.3			
Sept.	1	3:57 AM 9.1	5:24 PM 11.0	10:17 AM -0.7	11:08 PM 6.5			
	2	4:46 AM 9.2	6:17 PM 11.3	11:07 AM -1.5	: PM			
	3	5:39 AM 9.3	7:12 PM 11.5	0:01 AM 6.4	12:01 PM -2.1			
	4	6:37 AM 9.4	8:06 PM 11.7	0:56 AM 6.1	12:56 PM -2.3			
	5	7:39 AM 9.6	9:00 PM 11.7	1:51 AM 5.5	1:53 PM -2.1			
	6	8:44 AM 9.8	9:53 PM 11.6	2:46 AM 4.6	2:52 PM -1.6			
	7	9:51 AM 10.0	10:46 PM 11.4	3:42 AM 3.5	3:52 PM -0.7			
	8	10:59 AM 10.2	11:37 PM 11.1	4:37 AM 0.4	4:53 PM 0.3			

-Continued-

Port Moller tides, 1991. (page 4 of 4)

Date	---HIGH TIDE---			---HIGH TIDE---			---LOW TIDE---			---LOW TIDE---		
	Time	Feet		Time	Feet		Time	Feet		Time	Feet	
Sept. 9	:			12:05 PM	10.5		5:31 AM	1.3		5:53 PM	1.5	
10	0:28 AM	10.7		1:09 PM	10.8		6:11 AM	0.4		6:53 PM	2.5	
11	1:19 AM	10.3		2:10 PM	11.1		7:15 AM	-0.2		7:52 PM	3.4	
12	2:09 AM	9.8		3:08 PM	11.2		8:06 AM	-0.5		8:49 PM	4.2	
13	2:58 AM	9.4		4:04 PM	11.2		8:55 AM	-0.5		9:44 PM	4.8	
14	3:46 AM	9.0		4:56 PM	11.1		9:44 AM	-0.3		10:36 PM	5.3	
15	4:34 AM	8.7		5:47 PM	11.0		10:32 AM	0.0		11:27 PM	5.8	
16	5:21 AM	8.5		6:35 PM	10.7		11:20 AM	0.4		:	PM	
17	6:07 AM	8.3		7:22 PM	10.5		0:15 AM	6.1		12:08 PM	0.8	
18	6:55 AM	8.2		8:06 PM	10.3		1:03 AM	6.2		12:55 PM	1.3	
19	7:43 AM	8.1		8:49 PM	10.1		1:49 AM	6.2		1:43 PM	1.9	
20	8:33 AM	8.2		9:29 PM	9.8		2:35 AM	5.9		2:31 PM	2.5	
21	9:25 AM	8.3		10:08 PM	9.6		3:22 AM	5.5		3:19 PM	3.2	
22	10:17 AM	8.5		10:46 PM	9.3		4:01 AM	4.9		4:08 PM	3.9	
23	11:09 AM	8.9		11:22 PM	9.1		4:42 AM	4.2		4:58 PM	4.5	
24	11:59 AM	9.3		11:58 PM	8.8		5:22 AM	3.4		5:49 PM	5.1	
25	:			12:51 PM	9.8		6:02 AM	2.5		6:40 PM	5.6	
26	0:36 AM	8.6		1:40 PM	10.3		6:43 AM	1.6		7:30 PM	5.9	
27	1:16 AM	8.5		2:30 PM	10.8		7:25 AM	0.7		8:21 PM	6.1	
28	1:59 AM	8.5		3:20 PM	11.3		8:10 AM	-0.2		9:12 PM	6.1	
29	2:46 AM	8.6		4:11 PM	11.6		8:59 AM	-0.9		10:03 PM	5.9	
30	3:38 AM	8.7		5:02 PM	11.8		9:50 AM	-1.4		10:55 PM	5.6	

Note: To correct the time and height for high and low tides for Port Heiden add time and feet from the Port Moller tide table.

Port Heiden:	Time		Feet	
	High	Low	High	Low
	1:30	2:04	0.6	0.8

## 1991 PERSONNEL

Employee	Title	Duties And Location
Arnie Shaul, M	FB III	Alaska Peninsula (excluding Southeastern District) and Aleutian Islands Management Areas Salmon Management Biologist.
Jim McCullough, H/M	FB III	Southeastern District-Alaska Peninsula Management Area Salmon Management Biologist and Alaska Peninsula/Aleutian Islands Management Areas Herring Management Biologist.
Bob Murphy, M/R	FB II	Alaska Peninsula Management Area Salmon Research Biologist.
Bob Berceci, M	FB II	Assistant Salmon Area Management Biologist, Cold Bay/Kodiak.
Mark Stopha, H/M	FB II	Assistant Salmon and Herring Area Management Biologist, Sand Point/Kodiak.
Mike Ward, H	FB II	Assistant Herring Area Management Biologist, Dutch Harbor.
Hal Terry, H/M/R	Pilot I	Chief Pilot and Airplane Mechanic, Cold Bay
Dave Henley, H/M/R	Pilot I	Pilot, Chignik/Sand Point
Sharon Theis, M	Clerk	Kodiak
Steve Krueger, M	FB I	Nelson River
Chris Sundby, H/M	FB I	Canoe Bay, Thinpoint Cove
Matt Ford, M	FB I	Orzinski Lake
Tracy McKinion, R	FB I	Port Moller
Mark Weinberger, M/R	FB I	Ilnik Lagoon, King Cove
Judy Brandt, M	FB I	Bear Lake
Tim Clark, M	FT III	Bear Lake
Judy Hamik, H/M	FT III	Sand Point
Kenyon Pope, M	FT III	South Unimak, Canoe Bay
Brian Westgate, M	FT III	Nelson River

Dan Miller, M	FT III	Thinpoint Cove
Justin Freeman, M	FT III	Orzinski
Andy DeValpine, M/R	FT III	Ilnik Lagoon, Middle Lagoon
Ralph Andrew, H	FT II	Canoe Bay
Meesha Mangiaracina, R	FT II	Port Moller
Sam Nelson, R	FT II	Port Moller
Gregory Gregg, R	FT II	King Cove
George Malone, R	FT II	King Cove
Dan Thomas, M/R	FT II	Middle Lagoon, Ilnik Lagoon
Milford Green, M	FT I	Canoe Bay

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H = Herring Management

M = Salmon Management

R = Salmon Research (Catch Samplers)

Commercial Salmon Fishing Regulation Changes Resulting From the November 1991 and March 1992 Alaska Board of Fisheries Meetings.

SOUTH PENINSULA

I. Southeastern District Mainland Fishery

- A. Included all of the Northwest Stepovak Section except Orzinski Bay into that portion managed on the basis of Chignik sockeye salmon through July 25.
- B. Increased the allocation of Chignik destined sockeye salmon from 6 to 7 percent.
- C. Described the tip of Dent Point as 55°47'15" N. lat., 159°52' W. long.

II. South Unimak-Shumagin Islands June Fishery

- A. Increased the chum salmon cap from 600,000 to 700,000.
- B. Opened Morzhovoi Bay to commercial salmon fishing during June.

III. South Peninsula Post June

- A. The Board closed most of the South Peninsula not covered by the Southeastern District Mainland Management Plan during July from July 6 through July 19. Any fishing prior to July 6 would have to be an extension for weather make up in the South Unimak-Shumagin Island June fisheries or be in the Southeastern District Mainland. The only locations outside the Southeastern District Mainland that the Department can open during July 6-19 are as follows:
  - 1. Morzhovoi Bay Section
  - 2. Thin Point Section
  - 3. Cold Bay Section
  - 4. Canoe Bay Section
  - 5. That portion of the Pavlof Bay Section located north of the latitude of Black Point (55°24'34" N. lat.)
  - 6. That portion of Zachary Bay located south of 55°22'39" N. lat.



Commercial Salmon Fishing Regulation Changes Resulting From the Fall 1991 Alaska Board of Fisheries Meeting.

NORTH PENINSULA

1. Increase the maximum gill net depth to 90 meshes in the Northwestern District.
2. Eliminate gill net mesh size restriction in the Bear River Section after July 20.
3. In the Ilnik, Outer Port Heiden, and Cinder River Sections, the seaward end of a set gill net shall be no further than one-half mile from the terrestrial vegetation line of the beach, or in the Seal Islands within one-half mile of the mean high water mark.
4. In Swanson Lagoon, no more than 50 percent of the outlet channel may be blocked by gear at any stage of the tide.
5. During June 1 through August 31, the closed waters of Swanson Lagoon will include all waters enclosed by a line from 55°02'12" N. lat., 163°38'42" W. long., to 55°01'58" N. lat., 163°38'18" W. long.

After August 31, the closed waters of Swanson Lagoon are expanded to include all waters enclosed by a line from 55°02'12" N. lat., 163°38'42" W. long., to 55°02'07" N. lat., 163°39'44" W. long.

6. The closed waters of the Unangashak River are expanded to include all waters east of 159°15'04" W. long.
7. The closed waters of Cinder River Lagoon (Shagong) are expanded to include all waters enclosed by a line from 57°19'48" N. lat., 158°08'24" W. long., to 57°21'18" N. lat., 158°02'38" W. long.

A complete listing of the regulations are in the 1992-93 Commercial Finfish Regulation booklet available at all Alaska Department of Fish and Game (ADF&G) offices.

Commercial Salmon Fishing Regulation Changes Resulting From the  
Fall 1991 Alaska Board of Fisheries Meeting.

ALEUTIAN ISLANDS

I. Creation of an Atka-Amalia experimental fishery.

- A. Includes all waters of Alaska between Sequam Pass (172°50' W. long.) and Atka Pass (175°23' W. long.)
- B. Open to fishing only by purse seines and set gill nets. Purse seines may be operated only by holders of Area M CFEC purse seine permits.
  - 1. Purse seine gear specifications are the same as listed for the Aleutian Islands Area.
  - 2. The size and operation of set gill nets is as follows:
    - a. a set gill net may be no more than 100 fathoms in length; each CFEC permit holder may operate no more than one set gill net;
    - b. set gill nets shall be operated in substantially a straight line with no more than 25 fathoms of the offshore end set in any configuration;
    - c. the mesh size of set gill nets shall not exceed five inches;
    - d. the maximum depth of set gill nets shall not exceed 90 meshes;
    - e. 25 fathoms of seine webbing may be used as a lead, and may be attached only to the shoreward end of a set gill net; the shoreward end of the lead or gill net must be attached to the beach above high tide;
    - f. during hours of darkness, each set gill net must be marked with at least one red light on the seaward end of the net;
    - g. no vessel used for set net fishing may exceed 29 feet in overall length.
- C. The fishing season is from August 1 through August 31.
- D. Weekly fishing periods: salmon may be taken only from 6:00 A.M. until 6:00 P.M. during Mondays, Wednesdays, and Fridays.

- E. Salmon may not be taken within 500 yards of the terminus of any salmon stream.
- F. Each Atka-Amlia Islands seine and set net permit holder shall register himself or herself and each vessel that will be operated by contacting an area management biologist in Dutch Harbor, Cold Bay, Sand Point, or other places specified by the department, 48 hours before beginning commercial fishing.

## II. Changes in Aleutian Islands Area Boundary and District Changes

- A. The Aleutian Islands Area includes all waters of Alaska in the Aleutian Islands west of Cape Sarichef Light and west of a line extending from Scotch Cap through the easternmost tip of Ugamak Island excluding the Atka-Amlia Islands Area between Sequam Pass ( $172^{\circ}50'$  W. long.) and Atka Pass ( $172^{\circ}23'$  W. long.)
  - 1. The Umnak District includes all waters west of Umnak Pass to Sequam Pass at  $172^{\circ}50'$  W. long.
  - 2. The Adak District includes all waters west of Atka Pass at  $175^{\circ}23'$  W. long. to the terminus of the Aleutian Islands.

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